This Issue Exceeds 88,000 Copies

THE JOURNAL

OF THE

American Medical Association

Annual Subscription, $5.00 | PUBLISHED WEEKLY | Single Copies, 20 Cents

VOLUME 86, No. 16 | 535 North Dearborn Street, CHICAGO, ILL. | APRIL 17, 1926

CONTENTS AND SUBJECT INDEX

Lymphoblastoma (Malignant Lymphoma): Age and Sex Incidence, Duration of Disease, and the Effect of Roentgen-Ray and Radium Irradiation and Surgery. George R. Minot, M.D., and Raphael Isaacs, M.D., Boston 1185

Gentleness in Genito-Urinary Surgery. J. Bayard Clark, M.D., New York.1189

Scarlet Fever: An Analysis. Janvier W. Lindsay, M.D.; E. Clarence Rice, M.D., and Maurice A. Selinger, M.D., Washington, D. C.....1191

The Nasal Passages in Lobar Pneumonia: A Clinical and Bacteriologic Study. A. R. Felty, M.D., Hartford, Conn., and C. A. Heatley, M.D., Baltimore 1195

Puerperal Fever: II. Streptococcus Hemolyticus Toxin and Antitoxin. Abraham F. Lash, M.D., and Bertha Kaplan, M.S., Chicago.....1197

Long Standing Anuria: Certain Associated Phenomena. W. A. Myers, M.D., Kansas City, Mo.....1198

Carbon Monoxide Poisoning: Gradual, Cumulative Effects in Young Children, with Report of a Fatal Case. A. M. Stevens, M.D., New York..1201

A System for an Intensive Pollen Survey, with a Report of Results in Chicago. Karl K. Koessler, M.D., and O. C. Durham, Chicago.....1204

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

Effects of Insulin and Glucose on Acid-Base Balance in Surgical Diabetic Patients. R. B. Gibson, Ph.D., Iowa City 1209

Gallstones in Children. J. D. Carey, M.D., Fort Collins, Colo.....1209

A New Colostomy Belt. John W. Neely, M.D., Terrell, Texas.....1210

SPECIAL ARTICLE

The Technic of Medication: Sixteenth Article. Bernard Fantus, M.D., Chicago 1210

MISCELLANY

Clinical Thermometers. Bradford Noyes, Jr., Ph.D., Rochester, N. Y.....1239

EDITORIALS

The Pathology of Scurvy.....1214

Precaution in Tonsillectomy.....1215

The Spleen in Measles—an Overlooked Symptom 1216

CURRENT COMMENT

College Physical Examination the Start of a Life Habit.....1216

Veterans' Bureau Test of Clinical Thermometers 1217

Kaolin in Intestinal Disease.....1217

Idealism in Public Health.....1217

Lactic Acid and Muscular Function.1217

(Subject Index on next page)

ASSOCIATION NEWS 1218

Entered as Second-Class Matter, June 25, 1885, at the Postoffice at Chicago, Ill., under Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized on June 14, 1918. If undeliverable, return postage is guaranteed

Copyright, 1926, by the American Medical Association.

NEXT ANNUAL SESSION, DALLAS, TEXAS, APRIL 19-23, 1926.

Bulletin

Books provide a continuous postgraduate course, limited in breadth only by the books read.

"Reading maketh a full man," said Benjamin Franklin.

Saunders' Books are selected for their practical value.

A RECENT PUBLICATION

Moorehead and Dewey's Mouth Pathology

The authors of this book bring sharply to the attention of both the medical and the dental professions the great importance of the mouth as a factor in disease, not from the local aspect alone, but from the *general constitutional aspect* as well.

The book takes up anomalies, congenital defects, diseases of the teeth themselves, diseases of the jaw-bones, inflammations and granulations, the various organisms occurring chiefly in the oral cavity, inflammations of the mucous membrane of the mouth, syphilis, tuberculosis, diseases of the blood and the blood-forming organs, diabetes, the involvement of the mouth in pregnancy, lactation and menstruation, the involvement of the mouth in skin diseases, affections of the eyes in relation to diseased teeth, the relation between the ear, nose and throat and diseased conditions of the mouth, the nervous system, occupational diseases, diseases of the tongue and salivary glands, tumors of the mouth.

Throughout the text there are many illustrations, including 9 in colors.

Pathology of the Mouth. By FREDERICK B. MOOREHEAD, M.S., D.D.S., M.D., Dean and Professor and Head of the Department of Oral Surgery and Pathology, and KAETHE W. DEWEY, M.D., Assistant Professor of Pathology, College of Dentistry, University of Illinois. Octavo volume of 550 pages, fully illustrated. Cloth, $7.00 net

Another SAUNDERS' BOOK on Page 3

SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article; "ab," abstract; "E," Editorial; "C," Correspondence; "T," Therapeutics; "Ml," Medicolegal; "P," Propaganda for Reform; "ME," Medical Economics.

A. M. A., Board of Trustees' portraits....1180
annual congress on Medical Education...1218
Acid, lactic, and muscular function....E-1217
Addison's Disease, blood sugar curve in.ab-1249
Agglutination, hemagglutination 1235
interagglutination ab-1252
Alkaloids, changes in, on standing....ab-1253
Anaphylaxis to toxin antitoxin....1234
and reticulo-endothelial system....ab-1252
Anemia, aplastic ab-1254
erythrocyte metabolism in....ab-1255
pernicious, hydrochloric acid in....ab-1254
Anesthesia, in obstetrics ab-1250
Angina, monocytic ab-1255
pectoris, pathogenesis ab-1256
Aorta, coarctation of ab-1243
Arsenic on apples....1226
Arthritis in psoriasis ab-1256
polyarthritis of intra-uterine origin...ab-1243
Association News....1218
Asthma, autohemotherapy in ab-1253
experimental bronchial ab-1254
nasal ganglion injection for....ab-1244
specific antigen injection in....ab-1244
Bacillus colon infection, bile in....ab-1252
Bacteria, abortus-melitensis, agglutination affinities ab-1247
Bacteriophage 1235
Barbital, Fabre's test for....1235
Baths, American carbonic Nauheim....1235
Bile Duct, anatomy of....ab-1254
Bladder, cavernous hemangioma....ab-1248
sacral nerves section and....ab-1248
Blood cholesterol and liver....ab-1255
calcium; experimental hypocalcemia..ab-1246
constituent, new ab-1256
Bone surgery, fat embolism after....ab-1257
surgery, new horizon for....ab-1252
Book Notices....1236
Books Received....1238
Brain, sarcomatosis ab-1243
tumor causes sudden death....ab-1244
Breast, cancer, report on....1225
tuberculosis ab-1244, ab-1245
Bronchiectasis, neo-arsphenamine for...ab-1251
Bronchopneumonia in infants....ab-1255
n-Butyl Nitrite, antirachitic substances..ab-1246
Calcium, excessive ingestion of....ab-1246
Cancer growth and endocrines....ab-1257
growth, vs. food ab-1257
vs. industrial accidents....1229
Carbon Monoxide poisoning, juvenile....*1201
Cesarean Section after death....ab-1257
cicatrix, rupture in ab-1257
gonorrhea of eye after ab-1257
in vulva eczema ab-1257
Chickenpox lesions, nuclear inclusions in.ab-1247
Cholesterol, antirachitic substances....ab-1246
Chorio-Epithelioma and lutein cells....ab-1256
Cicatrix tissue, ulcers and cancers in...ab-1244
Coal tar odor 1235
Colitis, chronic ulcerative ab-1244
Colostomy belt *1210
Convulsions from fasting....ab-1243
Deaths 1231
Dementia praecox in twins....ab-1247
Dextrose, combined with insulin....ab-1255
effect on acid-base balance....*1209
Diabetes Mellitus, surgery in....*1209
coma, carbohydrates plus insulin in....ab-1255
Digestion, blood changes during....ab-1246
laryngeal ab-1254
Diphtheria, laryngeal ab-1254
anatoxin, Arthus' phenomenon after...ab-1252
toxin-antitoxin, anaphylactic reactions....1234
Diuretics vs. transplanted kidneys....ab-1247
Dressings, skin, sensitization from....ab-1252
Egg, vitamin content, vs. ultraviolet irradiation of hen ab-1246
Encephalitis, Epidemic, parkinsonism....ab-1245
tabes and Parkinson's disease....ab-1251
Endocrines and cancer growth....ab-1257
Epilepsy, new findings in....1229
Erythrocytes, new constituent in....ab-1256
transfused, viability ab-1254
Eye, implanted, sight restored....ab-1252
Fasting, metabolism during....ab-1258
uric acid retained during....ab-1246
Filatow-Dukes Disease ab-1256
Flagella, staining 1235
Foods, energy value ab-1247
Foreign Letters....1225
Gallbladder, calculi, in children....*1209
Gasoline poisoning, treatment....1235
Genito-Urinary Tract surgery....*1189
Glycosuria, "lag" ab-1250
Golgi, Camillo, death of....1228
Gonorrhea in men ab-1255
Government Services....1224
Hay-Fever, pollen survey....*1204
Hays, antirachitic properties....ab-1246
Health, boards of, emergency expenses, authorization Ml-1240
public, American idealism in,....E-1217
Heart cancer, secondary ab-1244
disease and life....ab-1244
Hemogenia with fatal menorrhagia....ab-1252
Hemoglobinuria in arsphenamine-bismuth treatment ab-1255
Hemophilia ab-1256
Heroin administration 1226
Hexylresorcinol 1234, ab-1243
Hip Joint, infectious arthritis....ab-1243
Hospital clinic ab-1218
municipal, gross neglect, liability....Ml-1242
patient, responsibility for....ab-1218
Hyperthyroidism, recurrent ab-1245
Infants, New-Born, resuscitation..1227, ab-1255
reaction time in ab-1255
vaccinated against tuberculosis....ab-1252
Injection, intracutaneous ab-1256
Insulin vs. acid, alkalis and enzymes....ab-1246
combined with dextrose ab-1255
effect on acid-base balance....*1209
Intestines, invagination of....ab-1258
disease, kaolin in....E-1217
Jaundice, hemolytic ab-1256
Jaw, syphilitic arthritis ab-1258
Joint, capsule, chondroma in....ab-1258
Kaolin in intestinal disease....E-1217
Kidney function tests compared....ab-1258
transplanted, vs. diuretics....ab-1247
tuberculosis, and trauma....ab-1248
Kuhlmann Test, psychiatric value....ab-1245
Labor, deflexion presentations....ab-1255
Lead poisoning, blood pressure in....ab-1253
Leech in male urethra....ab-1249
Lepra cell, origin of....ab-1247
Leukopedesis into stomach....ab-1253
Licensure, reciprocity, certificate of graduation Ml-1240
Liver and blood cholesterol....ab-1255
cirrhosis ab-1251
cyst, iodized oil diagnosis....ab-1252
Lung abscess, postoperative ab-1245
gangrene, ...1228, ab-1251
ventilation, in children....ab-1252
Lutein cells and chorio-epithelioma....ab-1256
Lymph Glands, tuberculosis....ab-1258
Lymphoblastoma (malignant lymphoma)..*1185
Malpractice, radium capsule injury....Ml-1241
Malta Fever vs. Bacillus abortus....ab-1247
Marriages 1231
Measles, vasomotors in ab-1256
spleen in E-1216
Medical Education vs. clinical practice..ab-1218
Medical Education, Registration....1236
Medication, technic of....*1210
Medicolegal 1240
Meetings, Coming Meetings....1242
Meningitis, "aseptic" epidemic....ab-1256
syphilitic, hyperpyrexia from....ab-1253
tuberculous, oxygen for....ab-1256
Menstruation, poisoning question....ab-1255
Metabolism, central stimulants of....ab-1254
during fasting ab-1258
in total anuria *1119
respiratory ab-1256
Milk, human, refraction index....ab-1243
Morphine, administering 1226
Muscle, function, and lactic acid....E-1217
Nephritis in children, acute....ab-1250
Neurosyphilis, familial ab-1251
New and Nonofficial Remedies....1213
News 1219
Nitrogen balance ab-1246, ab-1247
Nose ab-1256
rôle in pneumonia....*1195
Onchocerca volvulus infection....ab-1249
Orange Juice, ingestion of....ab-1247
Osteopathy on defensive....1225
Pain, referred ab-1247
Pancreas function test....ab-1255
Paralysis agitans, lesions in....ab-1251
agitans, parkinsonian states....ab-1245
facial, electrotherapy 1235
Pellagra and colitis ab-1244
Pelvis, foreign body in....ab-1249
Pentatrichomonas in Calcutta....ab-1249
Peptic Ulcer, internal treatment....ab-1254
roentgen findings ab-1258
spasms and pains in....ab-1254
Pericardium, roentgen study....ab-1251
Petroleum benzin ab-1254
Physical Examination, college....E-1216
Placenta, permeability ab-1243, ab-1251
Pleuroperitonitis, enterococcus ab-1251
Pneumonia, basal metabolism after....ab-1243
lobar, nasal passages in....*1195
Pneumothorax, artificial, fluid of, filtrable tubercle bacilli in ab-1252
Pollen survey, intensive *1204
Porocephalosis ab-1249
Pregnancy, dyspareunia in ab-1256
ectopic, Douglas pouch puncture in....ab-1255
psychoses during ab-1245
Propaganda for Reform....1233
Prostate, cancer, operation for....ab-1250
Proteins, maintenance values....ab-1247
shock and vegetative tonus....ab-1252
Psoriasis, arthritis in ab-1256
Puerperal Fever; streptococcus hemolyticus toxin and antitoxin....*1197
Puerperium and vaginal bacteria....ab-1255
Pupils in somatic and visceral disease..ab-1247
Pyelitis, congenital acquired....ab-1243
hexylresorcinol in ab-1243
Pyelonephritis, calcareous ab-1248
Queries and Minor Notes....1234
Quinine causes urticaria....ab-1249
intravenous injections 1229
Radio aerial, human....1234
Rickets and cod liver oil-water....ab-1258
antirachitic properties of hays....ab-1246
antirachitic substances ab-1246
raising antirachitic properties of milk by irradiation ab-1246
trypsin secretion and ab-1243
Roentgenograms, witness may view to refresh memory Ml-1242
Scarlatinella ab-1256
Scarlet Fever, Dick test....*1191, ab-1257
Schultz-Charlton blanching test....*1191
treatment, antitoxin *1191
Scurvy, pathology of....E-1214
Shaving creams, eczema from....1234
Sinusitis, rôle in pneumonia....*1195
Society Proceedings....1223, 1242
Spinal Cord compression....ab-1247
Splenomegaly in measles....E-1216
Sputum, microscopy of ab-1253
Staining flagella 1235
State Board Examinations....1236
Sternum, osteomyelitis ab-1245
Stomach, bacteriology ab-1254
leukopedesis into ab-1253
recurring pain in ab-1258
secretory disorders ab-1254
Strabismus, treatment ab-1256
Streptococcus hemolyticus toxin and antitoxin in puerperal fever *1197
Surgery, gentleness in *1189
Sympathectomy, periarterial....ab-1254, ab-1258
Syphilis, febrile tertiary ab-1253
serology ab-1255
Tabes, lesions in ab-1251
Telangiectasia, familial ab-1250
Thermometers, clinical....E-1217, *1239
Thyroid, glycemia and diathermy of....ab-1253
Tibia, occupational bursa on....ab-1249
Tissue cultures and oxygen ab-1257
Tonics and Sedatives....Adv. page 22
Tonsillectomy, precaution in....E-1215
Trypsin secretion and rickets....ab-1243
Tubercle bacillus passes thru placenta...ab-1251
Tuberculin test....ab-1243, ab-1256
Tuberculosis, experimental ab-1251
heredity ab-1251
in children, kidneys in ab-1253
in tobacco workers ab-1257
phthisic habitus ab-1256
pulmonary, Mátéfy test ab-1257
pulmonary, phrenic evulsion in....ab-1249
roentgen treatment ab-1254
treatment, Sanocrysin ab-1257
vaccination of new-born against....ab-1252
Twins, dementia praecox in....ab-1247
Uncinaria, larva, development....ab-1249
Uncinariasis of children....ab-1243
Ureter, stricture ab-1248
Urethra, male, hirudiniasis of....ab-1249
Uric Acid, retention, during fasting....ab-1246
Urine, chyluria, artificial ab-1254
anuria, long standing....*1198
fungus casts in ab-1258
oxaluria ab-1255
sugar, normal, excretion of....ab-1247
Urticaria from quinine ab-1249
Uterus, cancer ab-1258
Vasotomy ab-1248
Wassermann Test in parturients....ab-1258
in retroplacental blood....ab-1258
routine, importance of....ab-1248
Workmen's Compensation, blastomycosis compensable Ml-1241
neurasthenia compensable Ml-1240

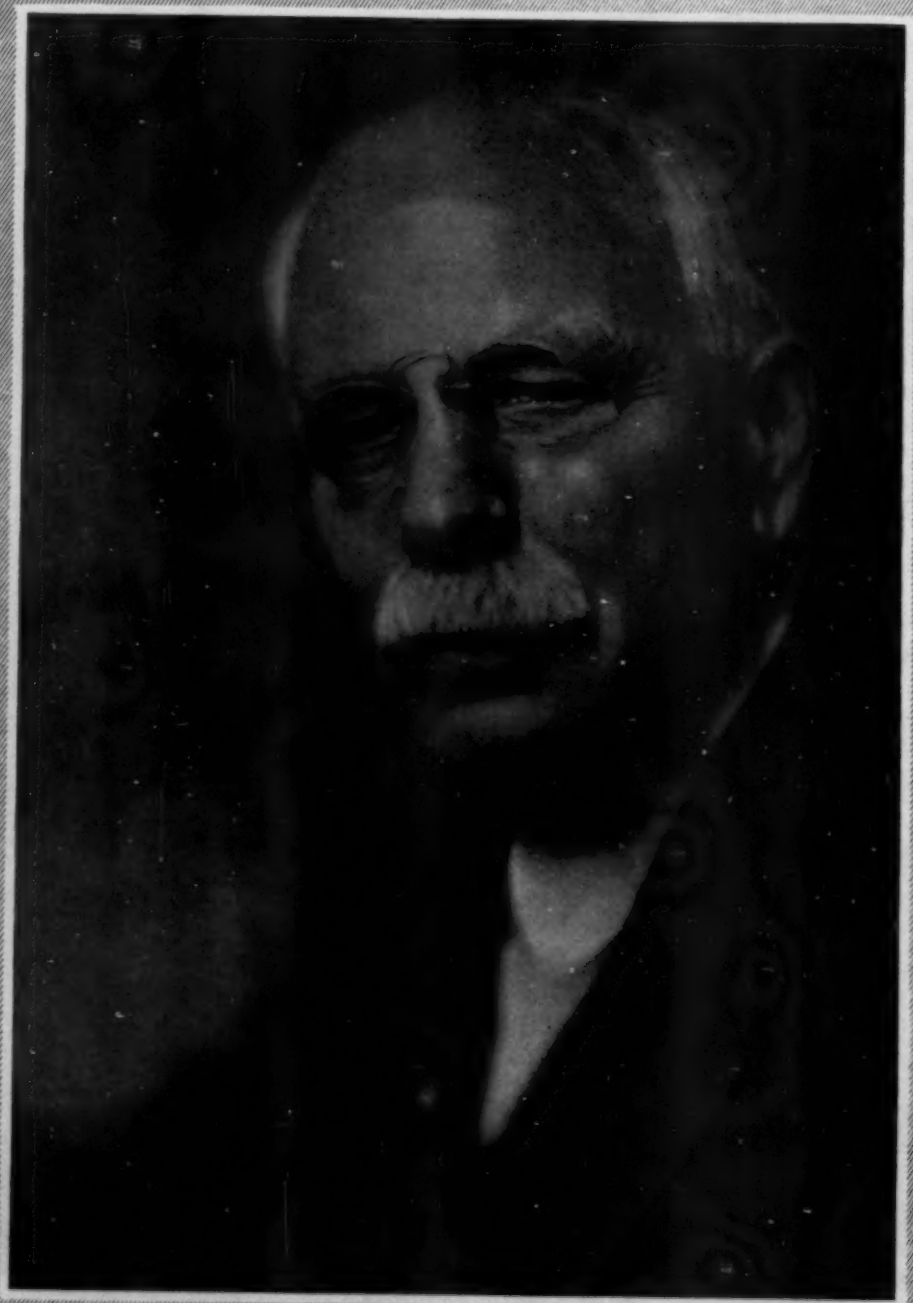
LEWIS { **Clinical Disorders of the Heart Beat.** *New Fifth Edition (1925)*. . $ 3.50
Clinical Electrocardiography (*1924*) 3.00
Mechanism and Graphic Registration of the Heart Beat (*1925*) . . . 18.00

CHICAGO MEDICAL BOOK CO.
Congress and Honore Sts.
CHICAGO

For the General Practitioner we have a Special Pressure, Suction and Anesthetizing Outfit. Portable and for office. Many thousands in use. May we mail you a description of it?

C.M. SORENSEN CO., Inc.
440 JACKSON AVE.-LONG ISLAND CITY-NEW YORK

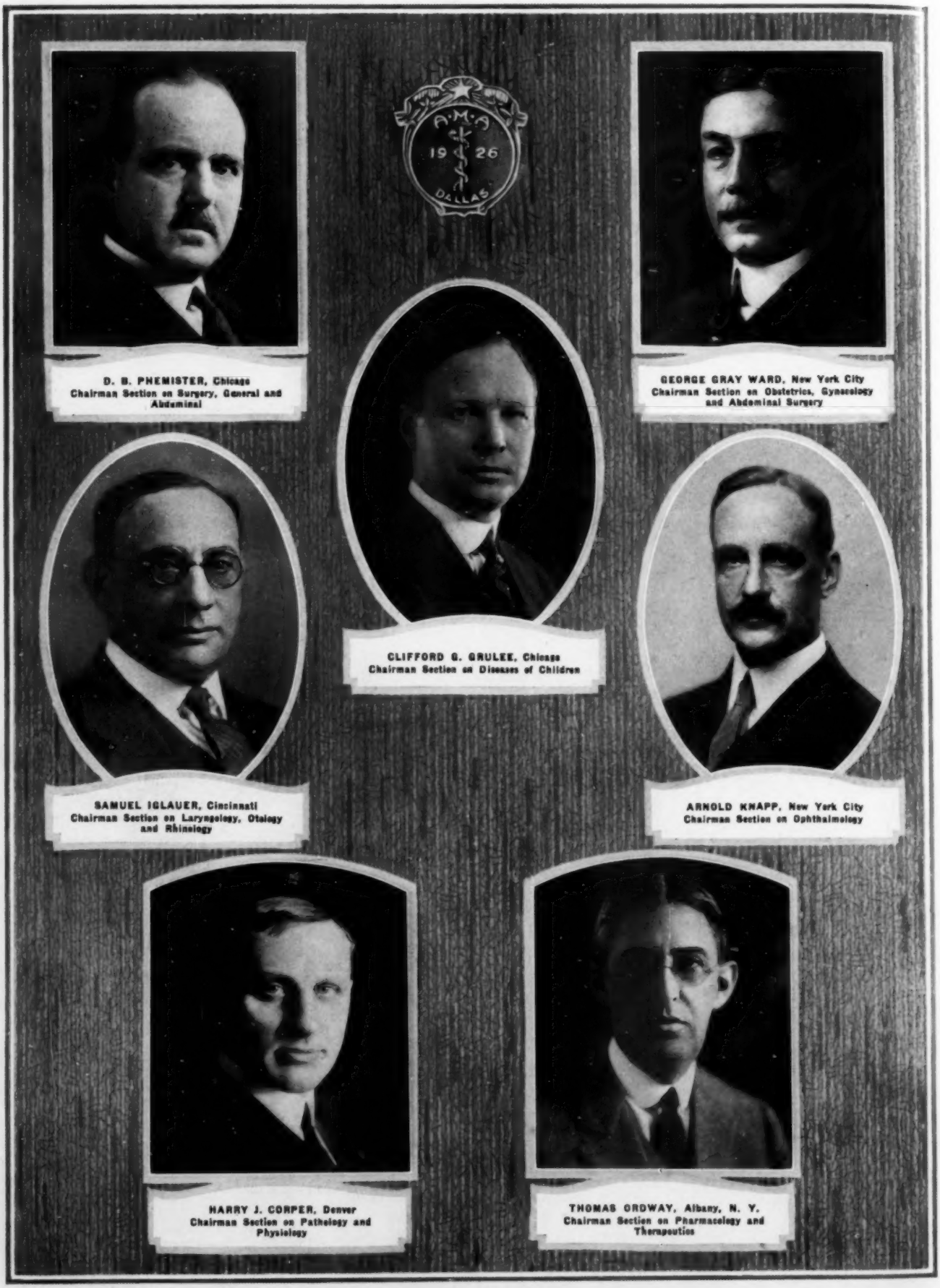
Specialists' Equipment. Portable and Hospital Anesthetizing Apparatus, Tankless Air Compressors, Chairs, Multiple-utility Outfits, Adjustable Lamps. Please ask for Catalog N.



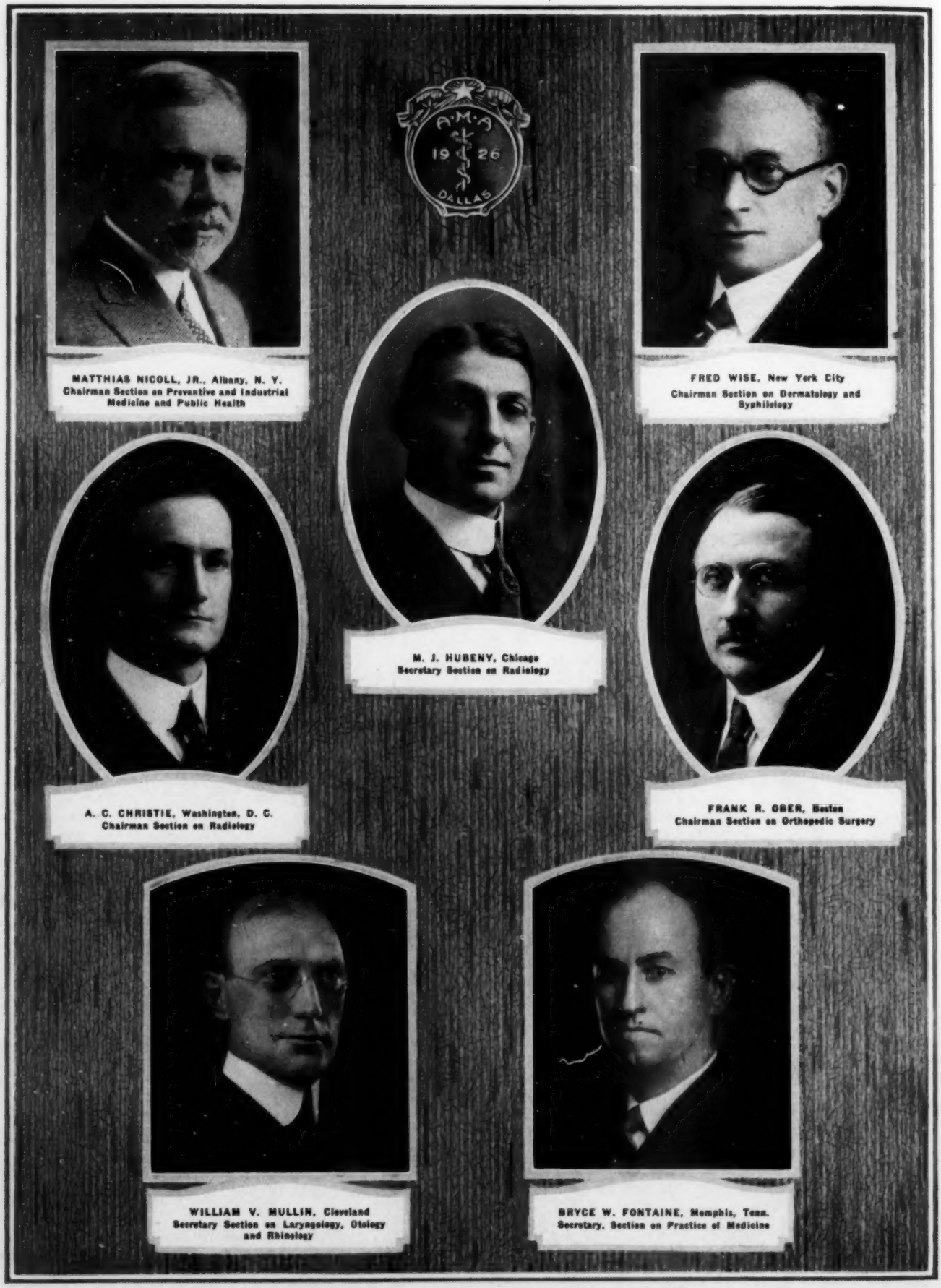
Wrudell C Phillips

PRESIDENT AMERICAN MEDICAL ASSOCIATION, 1926-1927

THE BOARD OF TRUSTEES, 1925 - 1926


A·M·A
19 26
DALLAS
D. B. PHEMISTER, Chicago
Chairman Section on Surgery, General and Abdominal
GEORGE GRAY WARD, New York City
Chairman Section on Obstetrics, Gynecology and Abdominal Surgery
CLIFFORD G. GRULEE, Chicago
Chairman Section on Diseases of Children
SAMUEL IGLAUER, Cincinnati
Chairman Section on Laryngology, Otology and Rhinology
ARNOLD KNAPP, New York City
Chairman Section on Ophthalmology
HARRY J. CORPER, Denver
Chairman Section on Pathology and Physiology
THOMAS ORDWAY, Albany, N. Y.
Chairman Section on Pharmacology and Therapeutics

SOME OFFICERS FOR THE DALLAS SESSION, 1926


A·M·A
19 26
DALLAS
MATTHIAS NICOLL, JR., Albany, N. Y.
Chairman Section on Preventive and Industrial Medicine and Public Health
FRED WISE, New York City
Chairman Section on Dermatology and Syphilology
M. J. HUBENY, Chicago
Secretary Section on Radiology
A. C. CHRISTIE, Washington, D. C.
Chairman Section on Radiology
FRANK R. OBER, Boston
Chairman Section on Orthopedic Surgery
WILLIAM V. MULLIN, Cleveland
Secretary Section on Laryngology, Otology and Rhinology
BRYCE W. FONTAINE, Memphis, Tenn.
Secretary, Section on Practice of Medicine

SOME OFFICERS FOR THE DALLAS SESSION, 1926

The Journal of the American Medical Association

Published Under the Auspices of the Board of Trustees

VOL. 86, NO. 16 CHICAGO, ILLINOIS APRIL 17, 1926

LYMPHOBLASTOMA (MALIGNANT LYMPHOMA)

AGE AND SEX INCIDENCE, DURATION OF DISEASE, AND THE EFFECT OF ROENTGEN-RAY AND RADIUM IRRADIATION AND SURGERY *

GEORGE R. MINOT, M.D.
AND
RAPHAEL ISAACS, M.D.
BOSTON

One of the big problems of modern medicine is to unravel the nature of the group of conditions that have progressive enlargement of the lymphoid tissue as their most prominent feature. Classification leads to clarification, and yet confusion arises from sharp distinctions between conditions that have many resemblances; which may be because some of the conditions are but different phases of the same disease. This is the state of affairs for those disorders with unknown etiology that may be placed under the general heading of lymphoblastoma, a name considered by some as synonymous with malignant lymphoma.

These terms may include lymphatic leukemia (lymphocytic and lymphoblastic), aleukemic lymphatic leukemia (pseudoleukemia, aleukemic lymphadenosis), lymphocytoma, Hodgkin's disease (lymphogranuloma), lymphadenoma, lymphomatosis, lymphosarcoma, round cell sarcoma, leukosarcoma and lymphadenosarcoma. Such conditions as Banti's disease, chloroma and Mikulicz's disease also may be included.

The views and opinions concerning the nature and relationships of such cases are multiple, and thus students of the problem have utilized a constantly confusing terminology, and not infrequently disagree on the exact diagnosis of a given case. Some apply a term that is synonymous with one used by another, while at other times a special type of case is designated by a name used by others to cover a much broader group. Hodgkin's disease with the pathologic histology described by Dorothy Reed is sharply distinguished by many authorities from two other conditions that they term pseudoleukemia and lymphosarcoma. Others inappropriately include as Hodgkin's disease all, more often some, cases of the latter two conditions, and the terms malignant lymphoma and lymphadenoma have been used for such a group alone. Some contend that two types of lymphoblastoma may occur in one patient. Confusion in the group called lymphosarcoma arises because of differences of opinion as to what constitutes this condition and the lack of appreciation of the difference between the origin of tumors involving structures composed of much lymphatic tissue. Pseudoleukemia and aleukemic lymphocytic or lymphoblastic or lymphatic leukemia are essentially synonymous, as is at times the term aleukemic lymphadenosis. Chronic lymphatic leukemia with a leukemic blood picture is the form of lymphoblastoma most easily separated from others. However, except for the peripheral blood picture, no important distinction, even by pathologic examination of tissue, can be made from cases termed pseudoleukemia or aleukemia, and the same case at different times may be given correctly the one name or the other.

It is highly desirable to have uniform terminology and to distinguish the differences of cases falling into this large group here termed lymphoblastoma. The differences are not for special consideration here, but it is wise to recognize four types dependent on their age incidence, clinical features, blood pictures, and pathologic histology of the diseased tissue. Lymphatic leukemia and pseudo or aleukemic, lymphatic leukemia may be considered two forms, and the progressively scirrhous type, usually known as Hodgkin's disease and often regarded as an infectious process, is a third. The fourth type of lymphoblastoma has a distinct tendency to invasion of tissue, to involve the tonsils, gastrointestinal tract and serous membranes, and shows a multiplication of reticular tissue and lymphoid cells, and is known as lymphosarcoma. To be sure, some cases of lymphoblastoma now considered very different may later be shown to have the same etiology, while others apparently the same may eventually be proved to have different origins.

MATERIAL AND NATURE OF THE STUDY

Knowledge concerning the general trends of disease as related to age, sex and duration, with and without treatment, aids prognosis and the understanding of pathologic states. It is our purpose in this communication to set forth data of these aspects of 477 cases of lymphoblastoma without making special subdivisions, but there are excluded those with a leukemic blood picture for any significant period of time; in other words, cases of typical chronic lymphatic leukemia. Cases of acute leukemia are also not included. The attempt is made to survey broadly facts concerning lymphoblastoma, yet recognizing the desirability to do so in a more detailed manner. Information of the type presented already has been given for chronic lymphatic leukemia.[1]

The statistical study of Desjardins and Ford [2] of 128 cases of "Hodgkin's disease and lymphosarcoma" and

* Because of its length this article is published in two parts, the second of which will appear next week.

* From the Medical Services of the Collis P. Huntington Memorial Hospital of Harvard University and the Massachusetts General Hospital.

1. Minot, G. R., and Isaacs, Raphael: Lymphatic Leukemia: Age Incidence, Duration and Benefit Derived from Irradiation, Boston M. & S. J. **191**: 1 (July 3) 1924.

2. Desjardins, A. U., and Ford, F. A.: Hodgkin's Disease and Lymphosarcoma, J. A. M. A. **81**: 925 (Sept. 15) 1923.

that of Schreiner and Mattick,[3] based on forty-six cases of "lymphogranuloma (Hodgkin's disease)," are the chief recent ones comparable to that presented here. The information presented by Bunting [4] concerning age and sex incidence is important. It is recognized that there are other papers bearing on the topics to be discussed, but for the most part they refer to few cases or treat the subjects in a somewhat different manner from that which follows.

The diagnosis of some form of lymphoblastoma was established by the pathologic examination of tissue [5] in 85 per cent of all the 477 cases. The clinical aspects of the other 15 per cent were so typical of lymphoblastoma that the cases have been included in the group. These

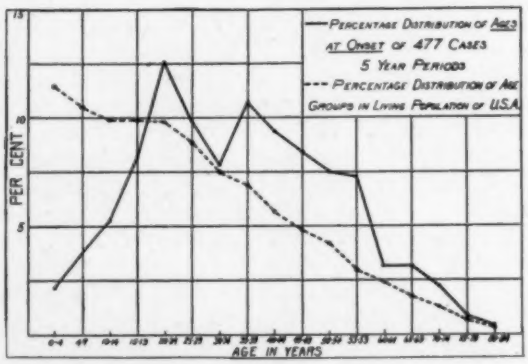

PERCENTAGE DISTRIBUTION OF AGES AT ONSET OF 477 CASES 5 YEAR PERIODS
PERCENTAGE DISTRIBUTION OF AGE GROUPS IN LIVING POPULATION OF U.S.A.
PER CENT
AGE IN YEARS

Chart 1.—Solid line, percentage distribution by five year periods of 477 cases of lymphoblastoma arranged according to age at onset; for comparison, a curve (broken line) is shown of the percentage distribution of persons of similar ages in the living population of the United States.

477 patients came either to the Massachusetts General Hospital (232 cases) between 1901 and 1925, or to the Collis P. Huntington Memorial Hospital of Harvard University (225 cases) between 1913 and September, 1925, or were seen in private practice (twenty cases) since 1916. Forty-eight per cent were seen first since the year 1919, and 19 per cent first came to one of the clinics before 1915. Of the 477 patients, 401 are known to be dead, and seventy-six are living. In some manner about 100 other cases have been studied, but as the observations are incomplete they are not utilized for this report.

AGE AND SEX INCIDENCE

Lymphoblastoma occurs in both sexes at all ages, but with a varying frequency as to age and sex incidence. The percentage distribution of the age at onset [6] in five-year periods is shown for all the 477 cases in chart 1. A line in this chart shows the percentage distribution of the population in the United States. The general decline in the population after the age of 24 roughly parallels the progressive decrease in the incidence of lymphoblastoma. Two similar curves plotted for ten-year periods show a closer parallelism than those in chart 1 for five-year periods, but the former arrangement of data does not permit the demonstration that lymphoblastoma is relatively rare at the ages of 30 to 34 inclusive.

It has been well recognized that lymphoblastoma occurs with greater frequency in males than in females. In this series there were 327 males and 150 females, or 68 per cent of the former and 32 per cent of the latter, a ratio of 2.12 to 1. This ratio varies significantly for different age groups, as may be seen by inspecting chart 2. There are, however, fewer females than males at all ages except 10 to 14 inclusive. The actual age incidence per hundred males and per hundred females is shown in chart 3, and the absolute number of cases is recorded in table 1. These figures demonstrate that the highest incidence of lymphoblastoma is in patients aged from 20 to 24, with a secondary rise in frequency in those from 35 to 39. They also show that the incidence in both sexes is highest at the ages of 20 to 24. However, the height of the incidence in the women tends to develop slightly later in life than in the men, as is evinced by the fact that the frequency of lymphoblastoma becomes greater, after the age of 14, more rapidly in males than in the females. Likewise, the second highest point of frequency of lymphoblastoma in the females occurred at a later age (40 to 44) than the males (35 to 39). The disease appears to be relatively rare in males at the time of puberty (10 to 14 years of age), while the frequency of lymphoblastoma in females of this age and at the ages of 45 to 54, or the time of the menopause, is to be noted. A somewhat similar state of affairs appears to occur for that type known as chronic lymphatic leukemia, and the greatest age incidence for these patients is between 45 and 55.[1]

The age incidence of that form of lymphoblastoma known as Hodgkin's disease, to which males are especially susceptible, is shown in chart 4. The chart presents, with comparable age groups, Bunting's [4] data and the data for the 173 cases of the 477 of this series

TABLE 1.—*Duration of Lymphoblastoma*

Number of Patients (Dead) Having Lymphoblastoma Less Than 10 Years, Arranged According to Age at Onset

	Age Groups in Years															
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	Total
Males...	6	14	3	23	37	28	24	34	24	21	20	21	7	8	4	2	1	277
Females	2	2	5	9	17	11	8	7	14	11	11	7	5	4	4	0	0	117
Total..	8	16	8	32	54	39	32	41	38	32	31	28	12	12	8	2	1	394

Average Duration of Lymphoblastoma for Cases Lasting Less Than 10 Years

All cases	2.57 years
Males	2.42 years
Females	2.95 years

Number of Patients (Dead) Having Lymphoblastoma 10 Years or Longer

1 female (age group 5-9)
2 males, 1 female (age group 40-44)
1 male in each of the age groups 45-49, 50-54, 65-69
Total 7; 5 males, 2 females

considered typical of Hodgkin's disease, as told by histologic examinations of a lymph node and the peripheral blood. The incidence of this condition is greatest in persons from 20 to 30. They comprise the majority of all cases of lymphoblastoma occurring at these ages, which are the ones at which the incidence for all forms of lymphoblastoma reaches its height. After the age of 30, there is a rapid decline in the occurrence of Hodgkin's disease, which takes place in an essentially constant manner. The relatively greater incidence of Hodgkin's disease in boys from 5 to 10 than in the five-year period before and after these ages is shown in both series of cases. Bunting has pointed out that the occurrence in females is greatest a few years later in

3. Schreiner, B. F., and Mattick, W. L.: Radiation Therapy in Forty-Six Cases of Lymphogranuloma (Hodgkin's Disease), Am. J. Roentgenol. **12**: 133 (Aug.) 1924.
4. Bunting, C. H.: Diseases of the Lymph Glands, Nelson Loose-Leaf Medicine, New York, Thomas Nelson & Sons **3**: 347, 1920.
5. The examinations were made by Drs. W. F. Whitney, J. H. Wright, F. B. Mallory, H. F. Hartwell, H. T. Karsner, S. B. Wolbach and E. W. Goodpasture.
6. The term "onset" is used in this paper to indicate the time when the patient first had symptoms or signs that could be attributed to lymphoblastoma. It is recognized that the disease state must have existed earlier.

life than in males, and that there are relatively more instances of the disease in females among older persons. The present data show the same, but not so clearly as Bunting's. It may be noticed that the curve for the age incidence in males of our series rises faster than that for females, though the actual peaks for the two sexes fall in the same age group. The curve for the women then tends to fall somewhat more slowly than that for the men. When the data are plotted for the age groups 18 to 22, and 23 to 27, the distribution curves yield a peak for males in the first group and for females in the second, thus resembling more closely Bunting's observations.

The time in life when lymphoblastoma occurs with the second greatest frequency appears to be also somewhat later in females than in males. Thus, this state of affairs is quite similar to that for the height of the age incidence in males and females for all 477 cases and for those of that form called Hodgkin's disease,

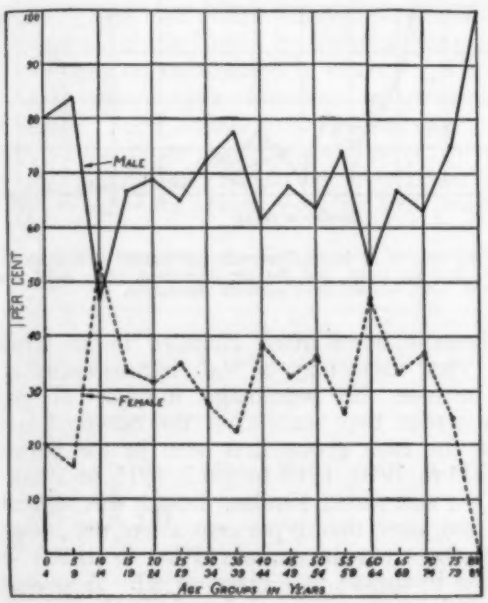


Chart 2.—Lymphoblastoma (477 cases, 327 males and 150 females): percentage of males and females in age groups of 5 years, arranged according to the ages at onset.

which comprise the majority of all cases of lymphoblastoma at this time in life. However, the second greatest age incidence of patients with lymphoblastoma is not dependent on the majority having Hodgkin's disease. This second peak is dependent especially on cases termed by some pseudoleukemia and lymphosarcoma. As recognized by Bunting, the decade between the ages of 30 and 40 is the particular time in life to find transitions from Hodgkin's disease to pseudoleukemia. Such records as those of Schreiner and Mattick,[3] indicating a second peak of age incidence for Hodgkin's disease, definitely suggest that the cases included are not of the same type as those given this name by others. The statistical facts recorded in the accompanying charts concerning the age incidence of patients with lymphoblastoma serve to emphasize what Bunting and others have noticed, that age and sex importantly influence the susceptibility of the lymphoid tissue to disease. These factors play a rôle not only in age incidence and occurrence of type of lymphoblastoma, but also in the rate of progress of the disease state.

DURATION

Suitable irradiation with roentgen rays or radium is a distinctly beneficial form of treatment for patients with lymphoblastoma, bringing relief to many sufferers. Desjardins and Ford [2] have pointed out that it is not well known whether such treatment or other forms of therapy definitely prolong the life of these patients or not. Data bearing on this have been collected for the present series of cases and have been analyzed and studied together with some other aspects of the duration of lymphoblastoma. The influence of several factors on duration must be borne in mind, and the facts are presented from a general point of view, recognizing that

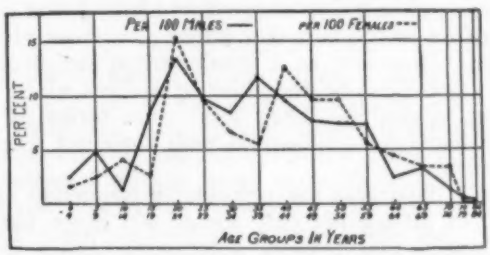


Chart 3.—Incidence of ages of males (solid line) and females (broken line) at the onset of lymphoblastoma.

errors arise in dating the onset of disease, that differences occur from year to year in so-called adequate treatment, and the like. Data concerning duration for all cases when plotted on probability paper give far from a straight line, clearly indicating that several factors must play a rôle and that there is no simple rule for predicting the duration of lymphoblastoma.

There were 163 patients of the 401 known to be dead that were not treated with any form of irradiation; thirty-three of these underwent a surgical operation

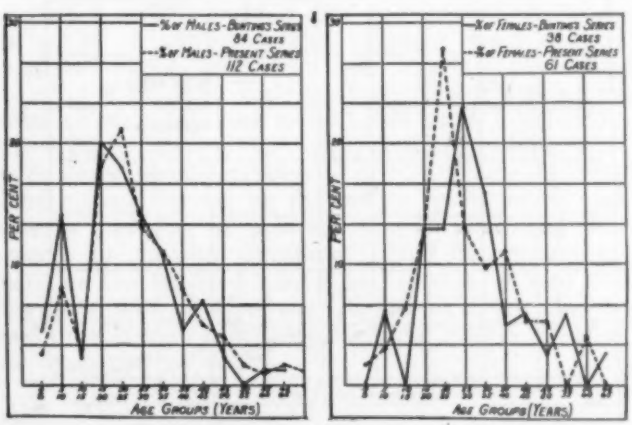


Chart 4.—Age distribution of cases of Hodgkin's disease, the percentage of males and the percentage of females in the different age groups of the present series (broken line) compared with Bunting's series (solid line).

with removal of a considerable amount of diseased tissue. The ages and the sexes of this group and the character of their disease states seem to be essentially the same as for 238 patients now dead who received treatment with either or both roentgen rays or radon.[7] Such treatment was given more often relatively late than early in the disease, though there were some first treated very early, but rather more were treated not long before death. The operations on the irradiated

7. Roentgen-ray treatments were given at the Massachusetts General Hospital by Dr. George W. Holmes and his associates. At the Huntington Hospital, the roentgen rays were administered by Drs. R. G. Giles, M. C. Sossman and R. W. Vance, and the radon by various members of the staff.

and nonirradiated patients varied widely in nature; a few were very complete dissections with removal of all obviously diseased lymph nodes; others consisted of the removal of large lymphomatous masses. Details concerning surgical measures are not for discussion here, as only the trend of the course of lymphoblastoma will be considered. A surgical operation of a therapeutic sort was performed on thirty-four of the irradiated patients. There were a number of patients who took arsenic in some form both among those irradiated and among those not receiving such treatment. A few patients were transfused with blood. Many of the patients that were given irradiations did not receive what today would be considered the most suitable form or amount, while a few received irradiation that cannot be looked on as the best that might have been given at the time. However, as a group, these patients were treated systematically and their symptoms often were alleviated markedly. They serve as a series of irradiated patients for comparison with those not receiving such treatment.

Chart 5 illustrates the percentage frequency of the duration of disease not only for all 401 cases, but also for the males and females separately. Lines in this figure demonstrate the susceptibility of males to the rapidly fatal types of lymphoblastoma, and the likelihood that women will survive longer than men after the onset of the illness. In spite of the fact that the average duration for all cases is 2.76 years, there were forty-one patients (10.2 per cent) that had lymphoblastoma for six years or more before death; twenty-eight (11 per cent) of those irradiated, and 13 (8 per cent) of those not so treated. Seven (1.74 per cent), four irradiated and three that were not, lived more than ten years after the initial symptoms. The cases of long duration are given special consideration below.

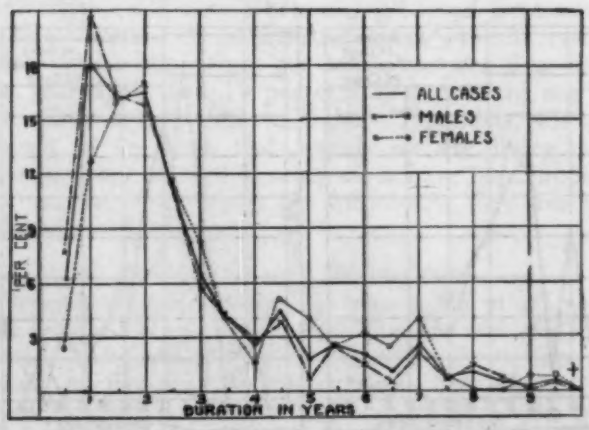


Chart 5.—Duration of lymphoblastoma, showing percentage distribution for all cases (401, solid line), and for males (282, dash-dot line) and females (119, broken line) separately.

EFFECT IN GENERAL OF IRRADIATION ON DURATION

A comparison of the duration of the disease in the irradiated and nonirradiated patients is shown in chart 6. These data suggest that this therapy has lengthened particularly the life of patients destined by nature to have their disease less than two and a half years, and has not influenced the course of those living long. Somewhat similar circumstances were met in studying chronic myelogenous leukemia.[8] There are, however, other ways to explain the differences. Patients with an acute form of lymphoblastoma that lasts a year or less probably soon become so ill that they are unable to reach a hospital where irradiation can be given; or it may be believed that their condition is so precarious that they are not referred for such therapy. On the contrary, it is probable that most patients with a relatively insidious onset of disease reach a clinic for irradiation. Thus, cases destined by nature to be of short duration would be more numerous in the nonirradiated group, and those fated to last long

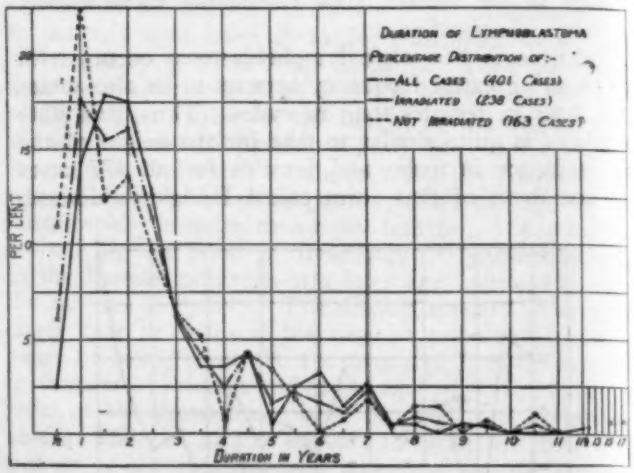


Chart 6.—Duration of lymphoblastoma: percentage distribution for all cases (401, dash-dot line), and for the irradiated (238, solid line) and nonirradiated (163, broken line) patients separately.

would become more often included in an irradiated group. That these may be the circumstances is suggested because the percentage number of patients living less than two years after the onset of lymphoblastoma for each group first seen in the periods of years 1900 to 1910, 1910 to 1915, 1915 to 1920, 1920 to 1925 +, was rather similar, though the highest percentage, not more than 8 per cent above the lowest, did occur in the ten-year period (1900 to 1910) before irradiation treatment was given at all. A comparison of the length of the course of disease in the four groups of patients first seen in these four different periods (making proper allowance for those now living) shows a very similar duration incidence. This suggests that in spite of the progressive improvement in irradiation methods, patients with lymphoblastoma recently have not had the disease run a longer course than it did fifteen years ago. The data concerning the seventy-six patients now living, and who, as a group, have had probably the best irradiation therapy, may be taken to indicate that this is not necessarily true. The chance for a long duration of their disease is more favorable than it was for the deceased when the probability of duration is taken into account with the time that they have already had lymphoblastoma.

A comparison of the data concerning the duration of the irradiated and nonirradiated deceased patients, plotted by the method of summation, shows that at any given time there was a greater percentage of patients living that were irradiated than were not. Even so, the differences at any period of duration are slight. The average duration of the disease in the 238 patients irradiated was 2.88 years, and in the 163 that were not, 2.45 years. The frequency of different durations of lymphoblastoma is almost exactly the same in the patients treated and those not treated by irradiation

8. Minot, G. R.; Buckman, T. E., and Isaacs, Raphael: Chronic Myelogenous Leukemia: Age Incidence, Duration, and Benefit Derived from Irradiation, J. A. M. A. 82: 1489 (May 10) 1924.

when only four groups are considered; namely, those having this disease less than three years, from three to six, from six to nine, and more than nine years. The influence of early irradiation on duration is reserved for consideration below.

EFFECT OF SURGERY ON DURATION

The patients treated by surgical measures, whether or not they received roentgen rays or radon, had lymphoblastoma on the average 3.67 years, or 1.11 years longer than the average duration (2.56 years) of the disease in the 334 not undergoing a therapeutic operation. The chances of the former living beyond three years from the time of their first symptoms was greater than for the whole group of irradiated patients. However, the percentage dying a year or less after the onset of disease was the same as for the cases given no especial treatment, and only 10 per cent less than for the latter group at the end of the two-year period. A comparison between the duration of each of the thirty-four cases (average 4.07 years) treated surgically and by irradiation, and that of the thirty-three cases (average 3.25 years) treated only by surgical measures is shown by means of summation in chart 7. The plots show clearly that longer durations occurred in the former group. Such statistics can mislead one, and the following probabilities are to be borne in mind: Surgical procedures are apt to be undertaken chiefly when lymphoblastoma seems local or has progressed

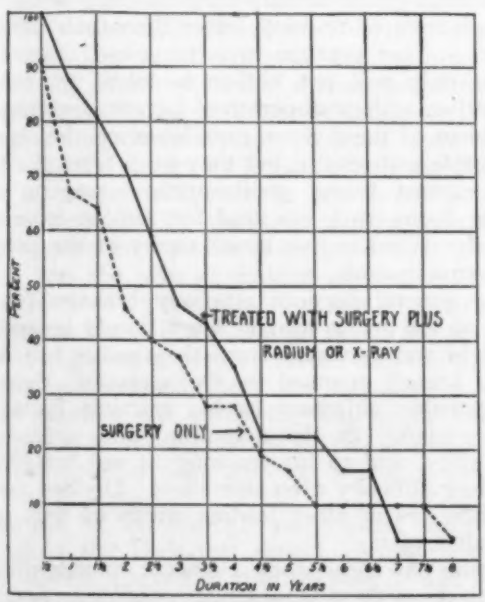


Chart 7.—Duration of lymphoblastoma: A comparison, by summation curves, of the percentage of patients living for given periods of time, with reference to whether they were treated by surgical measures combined with roentgen-ray or radium (thirty-four cases, solid line) or with surgery only (thirty-three cases, broken line).

slowly or is not extensive. It is just such cases that seem destined by nature to last relatively long. Hence, it is difficult to state for a group of cases that surgical treatment was responsible solely for a long duration of the disease. That surgery alone or combined with irradiation can perhaps cure or play a most important rôle in extending the duration of a given case appears probable and is referred to later. The facts, however, especially as they pertain to the influence of a combination of surgery and irradiation in contrast to surgical treatment only, must also be evaluated cautiously. Some deaths occurred soon after operation. Such cases without previous irradiation would fall into the group of patients not irradiated, thus favoring the statistics for those that were irradiated. Again, in the irradiated group are patients who received no such treatment until long after a therapeutic operation, when the rays were used rather as a measure of last resort, so that very probably they did not influence duration.

(To be continued)

GENTLENESS IN GENITO-URINARY SURGERY

J. BAYARD CLARK, M.D.
NEW YORK

With the foregoing title in mind, I have stood on the edge of this short literary outburst for several years; years that have only emphasized the more the importance of this subject. Twenty years ago in the early moments of our fierce scientific surgical ardor, such a title would have seemed rather too effeminate to adorn a serious surgical essay. Today the situation is somewhat different, for the avoidance of trauma has come to have a new significance to the thoughtful student of contemporaneous surgery.

Back in days much earlier, when hospitals and surgical workshops were germ-ridden with organisms of exalted virulence, a surgical operation, with trauma or without trauma, was more likely than not to be followed by grave septic complications, and a fatal issue was a common conclusion. Then came the era that gave us antisepsis. Then asepsis itself came, with its marvelous results, as compared with the dark days of death dealing surgery before its advent. It can hardly be wondered at that the surgeon should for a time lose sight of that precious possession held by him in earlier days; namely, a deft and delicate touch. It is not at all surprising that so many great surgical teachers, elated with this new mastery of sepsis, assumed a boldness with the body tissues that placed them on strangely new pinnacles of fame. Naturally, these hardy masters had many ardent students who, with sterile gowns and gloves, emulated their methods. Had science not hit on the hidden secret of all that ghastly mortality of previous time? What had gentleness to do with the issue? Had not experience, hard on the heels of science and asepsis, proved that the germ and not the lack of gentleness was the one and great cause of infection and all the sorry sequellae of the surgeon's work?

Now it happened that the influence of this new boldness of surgical technic hit very hard on the field of medicine in which the then budding genito-urinary specialist was encamped. He, too, emulated the venturesome tactics of the famous masters; but, unlike the cutting, tearing, prying, delving and hard retracting surgeon, he was armed also with pushing, spreading, puncturing and probing implements which he used along the urethra, in the bladder and on beyond through the ureters into the kidneys. It is in the use of these instruments especially that this paper essays to deal. For again, unlike the general surgeon's problem of surgically clean methods, the genito-urinary surgeon has to deal with germ enemies resident along the urogenital canal, as well as those organisms of a pathogenic nature that remain after an infection has subsided and apparently disappeared. For him to traumatize the tissues in his instrumental manipulations means a

lowering of tissue resistance and a breaking down of nature's defense mechanism against these invading or domesticated forces of germ enemies resident along the genito-urinary tract—a tract that cannot be prepared against infection as the skin is prepared for surgical procedure.

Bound up intimately with this question of using genito-urinary instruments in a manner that will not bruise the tissues and lay them open to easy invasion of infecting organisms is the larger subject of mental and nervous traumatism through fright, fatigue, fear, shock, apprehension, anxiety, alcohol and general anesthesia. Not a single one of these causes, which play major rôles in depression of tissue resistance and pave the way for local infection, can for a moment be lost sight of or forgotten by the urologist bent on attaining a high level of results. Crile's work on this important phase of surgery has added new luster to the intellectual side of American medicine, and workers in any branch of surgery cannot be said to be equipped who have not an appreciation of it.

A brilliant illustration of where we stand in this art is the mental reaction of any physician who is himself to be catheterized or examined with sound or cystoscope. If the genito-urinary surgeon wishes to find out exactly how the medical profession at large feels about the use of these necessary instruments today, let him have a few doctor patients who are in need of, let us say, a cystoscopy or a ureteral catheterization. He will soon find that he has on his hands patients filled with a pathetic fear of what they look on for themselves as a dreadful ordeal—an ordeal filled with the possibilities of excruciating pain, subsequent infection and, perhaps, irreparable injury. In consequence of this attitude rooted deep in their subconscious mind, it oftentimes becomes a well nigh impossible task to render them real service.

Next in difficulty of handling are those lay patients who have had experiences at the hands of inexperienced medical men in this realm of endeavor, persons who tell of a cystoscopy under a general anesthesia and of having been laid up in the hospital for days or weeks thereafter, recovering from the effects on their outraged and traumatized tissues.

Next to these comes the long line of patients traumatized by catheters, sounds or bougies. Notable among them are those brought to the hospital after fruitless attempts to relieve an acute attack of urinary retention, their urethras bleeding, congested and hopelessly blocked, and the stage all set for a serious infection. A surgical operation is forced on them, which might well have been avoided or postponed until they were carefully led up to the point at which it could have been performed with relative safety and success.

In larger numbers even come those patients whose strictured urethras have for years been subjected to reckless traumatizing and forcible dilation, suffering from each new adventure with increase of scar tissue and receiving in addition such sequelae as retention, infection of prostate or epididymis, and false passages. Can it be wondered at that, when the physician himself comes to face the necessity of a genito-urinary examination, he trembles with dread at the prospect, and the sphincteric sentinels of his bladder become as adamant as the fortifications of Verdun?

It does seem too bad that all this avoidable pain, suffering and infection, and the many escapable operations, with their consequent disability of vital functions, should not be brought into the focus of our more serious consideration—and held there. By gentleness, we can avoid virtually all the pain in connection with instrumentation. By gentleness, we can overcome the patient's apprehension, which unconsciously closes the external sphincter of the bladder. By gentleness in dealing with strictures, we can obviate splitting the scar and adding to it new fibrous tissue. By gentleness in cystoscopy, we can almost always avoid using anesthetics, which only blunt the patient's sensibility, our surest guide in avoiding traumatism with its many undesirable sequelae.

But even with gentleness in genito-urinary technic, a desirable state of affairs is not to be expected from those not sufficiently trained and experienced. Genito-urinary work is the one thing the young practitioner, as he starts in practice, looks to as his surest financial support. I should say it is the one thing that he is least fitted to attempt, for it seems the one medical branch of all others in which there is the greatest possibility of doing harm and inflicting permanent injuries. Many older practitioners "dabble," as they say, in genito-urinary work. How they have the temerity so exactly to express it is difficult to understand when one sees the results.

Perhaps one of the most serious situations of all from the standpoint of the patient and of the prestige of the profession of medicine as a whole is the practice of some general surgeons to assume the responsibility of serious genito-urinary surgical cases without the least equipment or training, other than their ability as operators. This practice is a two-edged sword, for they not only will not bother to learn the essential preoperative and postoperative factors entering into the problem of these cases, thus lowering the standard of attainable end-results, but they keep from the hands of the earnest young genito-urinary surgeon much operating room work essential for him to have to be sufficiently skilful in this lesser aspect of the problem, the operative technic.

If the general surgeon sincerely believes that the surgery of the genito-urinary tract should be included in his field and excluded from the smaller but highly technical branch assumed by the specialist, there can be no possible objection to his training himself to equal proficiency in the diagnostic and preoperative responsibility, and to his learning to see his patients out of their difficulty after operation. Divided responsibility here, as in other leading walks of life, is not the soundest plan.

The time has come when a sincere consideration of such subjects as these is no longer possible to postpone. There is good reason why there are so many other cults pioneering in the broad field of the healing art. If complete public confidence is to be restored to the profession of medicine, it will have to be merited by the quality of services rendered all along the line.

Medical Practice of Primitive Tribes.—Primitive tribes existing at the present day show in their medical practice features closely comparable to those found everywhere in the medicine in antiquity. Disease is ascribed to the action of supernatural agents or of human magic, and treatment is carried out mainly by incantation, ceremonials and exorcisms, but again we find a number of remedial practices, apparently divorced from the demonological theory and therapy, and including the use of drugs and such simple measures as poulticing and bloodletting.—Hart, Bernard: *Lancet* **1**:586 (March 20) 1926.

SCARLET FEVER

AN ANALYSIS *

JANVIER W. LINDSAY, M.D.
E. CLARENCE RICE, M.D.
AND
MAURICE A. SELINGER, M.D.
WASHINGTON, D. C.

In presenting this analysis of the work of the scarlet fever ward of the Garfield Memorial Hospital, we recognize that many points require much further study; but certain facts seem to be of sufficient importance and sufficiently clearly demonstrated to justify offering them as additional evidence in support of reports already published and to which our results appear to correspond. While we shall not refer at length to papers that have appeared, we are indebted to the workers who have made available the newer methods for the study and management of one of the most dreaded diseases and to those who have generously supplied us with materials.[1]

We have been interested in the various phases of the scarlet fever problem, including the intracutaneous test, after the method of the Dicks, both for susceptibility and for diagnosis, the Schultz-Charlton blanching test, the attempt to produce active and passive immunity, and treatment by the specific antitoxin.

THE INTRACUTANEOUS TOXIN TEST

Except in the early period of the study, there has been no difficulty in adjusting the concentration of the toxin for the Dick test so that a true determination of susceptibility or immunity might be obtained. The fact that a given specimen actually possessed toxic properties was readily shown by injection into the skin of a number of susceptibles, and the permissible concentration was controlled by similar injections in a number of known recovered scarlet fever patients. A valuable aid also was the plan of making successive intracutaneous injections of toxin, at intervals of several days, in patients acutely ill with scarlet fever, the very early test usually giving a positive result, and the later ones becoming progressively less marked until a definite negative reaction was obtained. This procedure is not only a guide to the regulation of the proper skin test dose, but is also a demonstration of the specificity of the toxin.

It cannot be too strongly emphasized that tests of the type of the Dick test should always be made in groups, so that a series of controls may be had for each observation and for each lot of toxin used. It has been our good fortune, through the courtesy of the Public Health Service, to have a supply of its standard toxin. This preparation has been used in duplicate tests by simultaneous injection with a second toxin in seventy subjects, and the reading has corresponded in all but four instances, two of these being in the early stage of the study when the second toxin proved too strong, as it was then prepared. The second toxin practically always gave a more marked reaction than that resulting from the Public Health Service standard. As there appears to be a considerable range of safety between the limits of which a truly diagnostic serum may be adjusted, that is, without danger of false positive or negative reactions, we have rather favored the stronger concentration, as giving more definite and more readily classified readings, a factor of considerable importance in applying the test to dark skinned races, such as the negro. In those cases in which a difference in reading occurred, the Public Health Service standard gave a negative and the second toxin a positive reaction, of faint or moderate degree.

We have no knowledge that any of the subjects, tested by either of these toxins and considered immune, have later developed scarlet fever, and our attitude in advocating the more concentrated toxin is based rather on theory than on definite evidence; but it is our feeling that the use of the higher concentration, properly controlled by tests on known recovered patients, may better insure the recognition or detection of a small percentage of susceptibles who may possess sufficient natural antitoxin to neutralize the toxin contained in the more dilute preparation.

That there is a great variation in the amount of natural antitoxin in different persons is well brought out in a series of Dick tests, and this point should be constantly kept in mind, for, as will be described later, the use of a large dose of toxin for active immunization of a susceptible in whom an unusually marked local reaction indicates the presence of an unusually small amount of natural antitoxin may lead to startling results, if not to actual danger.

In a series of 284 intracutaneous tests, 109 were positive, 175 negative, eighteen pseudonegative and nine combined positive. The protein factor, when present in the pseudo and combined reactions, did not cause confusion, as the toxin and control areas corresponded closely in appearance in the former, and the toxic, superimposed on the protein reaction area, was clearly contrasted with the purely protein reaction area of the control in the latter. In connection with the subject of the combined reaction, we would mention again our belief in the advantage of the stronger concentration of toxin.

No instance of an immune having subsequently contracted scarlet fever, as determined by the intracutaneous test, has occurred in this series, so far as we know. On the other hand, eight found to be Dick positive and therefore considered susceptible have since developed the disease. The fact that the subjects of these tests included a number of nurses and medical students who afterward were directly exposed to scarlet fever in the wards has added interest to the study of the results.

The successive intracutaneous injections of toxin, already referred to in connection with the adjustment of the dose for use in the Dick test, have also, in a number of instances, helped to clear up doubt as to diagnosis. This procedure, if begun early in the illness, may well be the means of preventing exposure of a susceptible, suffering from some disease simulating scarlet fever, to the danger of infection from too hasty admission to the ward, on the basis of clinical study alone. On the other hand, the evidence that a patient was immune when placed in the scarlet fever ward or the reinforcement of the clinical diagnosis by the single or repeated Dick test may help to relieve the attending physician or institution of the burden of criticism frequently associated with supposed errors in this type of disease. We would hesitate today to make a diagnosis of scarlet fever in a patient previously well, who, promptly after tonsillectomy, some other surgical pro-

* From the Clinical Laboratory and Scarlet Fever Service, Garfield Memorial Hospital, in collaboration with Drs. R. S. Beale, H. C. Macatee and C. M. Beall, attending physicians.

1. All materials not otherwise specified in the text were supplied through Eli Lilly & Co., Indianapolis.

cedure, or a severe burn, developed a rash, with or without angina and nausea and fever, until the clinical evidence has been supported by the appropriate use of the Dick test.

SCHULTZ-CHARLTON TEST

The rash extinction test of Schultz-Charlton has been of some interest with regard to diagnosis and also as a means of judging the potency of antitoxins

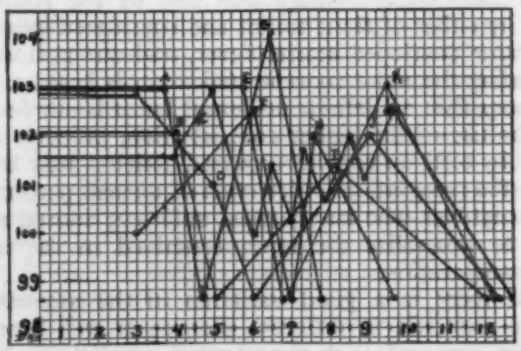


Chart 1.—Antitoxin dosage in patients showing no severe complications: *A*, 15 cc. (II); *B*, 25 cc. (II); *C*, 10 cc. (III); *D*, 30 cc. (II); *E*, 40 cc. (I); *F*, 10 cc. (I); *G*, 25 cc. (III); *H*, 10 cc. (I); *I*, 25 cc. (II); *J*, 40 cc. (I); *K*, 35 cc. (III), and *L*, 10 cc. (III). Average fever period, 10.6 days. In the charts, the type of antitoxin is indicated by Roman numerals: I, prepared by Dochez; II, Lilly unconcentrated; III, Lilly early unconcentrated; IV, Lilly new concentrated, at least 30,000 to 50,000 skin test doses per cubic centimeter.

used in treatment. When several lots of antitoxin have been at hand, we have used in a given case the one that gave the best blanching reaction when either or both produced a positive result. As the result of this procedure is much affected by the time at which it is carried out with relation to the onset of the illness, and as a local protein reaction frequently renders the test useless, we have depended less on this than on other methods of studying both of these problems. From a rather limited number of observations, we have concluded that a positive blanching test doubtless indicates some degree of antitoxic potency in a serum, but that a failure to blanch the scarlet rash does not necessarily indicate that the serum will not prove to be an efficient antitoxin, even in the case in which it gave the negative result.

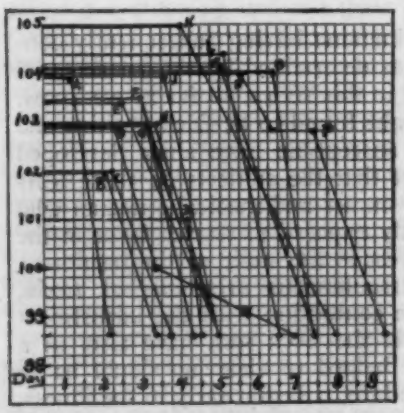


Chart 2.—Antitoxin dosage in patients showing no severe complications: *A*, 40 cc. (II); *B*, 40 cc. (I); *C*, 10 cc. (I); *D*, 40 cc. (III); *E*, (IV); *F*, (IV); *G*, 15 cc. (II); *H*, 40 cc. (II); *M*, 40 cc. (I); *N*, 40 cc. (I); *O*, 40 cc. (II); *P*, 40 cc. (I). Average fever period, 5.4 days. *X*, case with inpetigo.

IMMUNIZATION

In the field of immunization, our concern has been rather with the active than with the passive method. Several prophylactic injections of antitoxin have been given, but, even in a very limited series, what appear to be quite contrary results have been seen. One patient developed scarlet fever within four weeks after the inoculation. She had not been retested for susceptibility after the antitoxin had been given, so we do not know definitely that she had been immunized at all. Two other subjects, shown to be strongly Dick positive, became Dick negative within three days from the time of injection and were still negative eight weeks later. In view of the uncertainty of immunity from this method and the possibility that the antitoxin injected for this purpose may neutralize toxin later given to produce active immunization, it seems best at this time to proceed with the active method as early as possible, if any attempt is to be made to develop protection in a susceptible individual, remembering, of course, that it may take some weeks for immunization to be established. As previously stated, the work of active immunization included a group of nurses and medical students. We shall refer chiefly to these, with a few others whom it has been possible to observe continuously and to retest several times, the data thus obtained appearing to us of more value than a larger group, the subsequent history of which is indefinite or unknown.

To each of a group of fourteen susceptibles thus selected, three injections of toxin were given subcutaneously, the first dose of twenty-five skin test doses, the second of sixty-five and the third of 125. As this dosage was based on the skin test dose as indicated by the more concentrated toxin, the figures would be about three or four times as high in terms of the Public Health Service standard. On retest six weeks later, all the

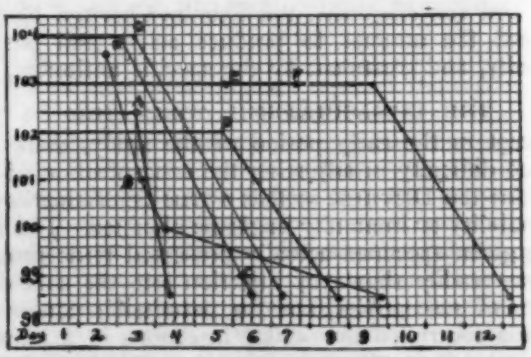


Chart 3.—Antitoxin dosage in patients showing no severe complications: *A*, 40 cc. (II); *B*, 25 cc. (III); *C*, 30 cc. (II); *D*, 25 cc. (II); *E*, 40 cc. (II); *F*, (IV); *G*, 40 cc. (III). Average fever period, 6.4 days.

nurses so inoculated were found to be Dick negative. Two medical students and three children were still positive, although there was a marked reduction in the intensity of the reaction in all but one.

At this time the plan was adopted of assigning to duty in the scarlet fever ward only those nurses who had been found to be Dick negative either because of natural immunity or as a sequel to toxin injection. One of the nurses, who had been found to be Dick positive and who failed to report for immunization, was inadvertently assigned to the ward for active service. She developed typical scarlet fever shortly after entering on duty and was the only nurse who had scarlet fever during the period of our analysis. No member of the immunized or probably partially immunized group just described has had scarlet fever.

Several nurses, including some naturally immune and some actively immunized, had sore throat with fever during their service in the scarlet fever ward, but all gave clearly negative skin tests made immediately on appearance of symptoms; none had a rash or other clinical evidence of the disease; none desquamated and all returned to duty, apparently well, in a few days.

By contrast, in 1920 four nurses, in 1921 eight, in 1922 seven, in 1923 six and in 1924 five were ill with typical scarlet fever while serving in the ward. Of the thirteen comprising the special group described, in

whom the attempt at active immunization was attempted, eleven were available for retest after ten months. Two could not be reached, but are known not to have had any illness resembling scarlet fever. Eight were still Dick negative; three highly susceptible children were still positive, though to a less degree than at the first test, and one nurse, negative at the first retest after inoculation, showed a very faintly positive reaction at

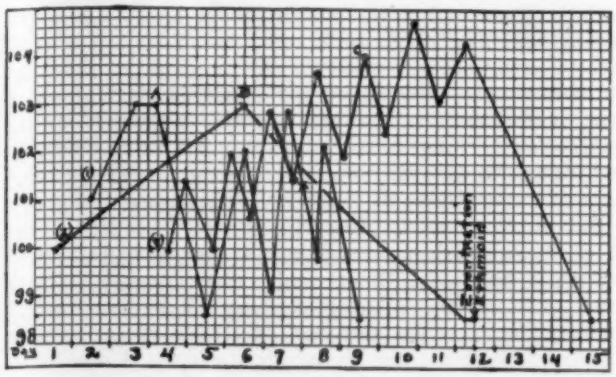


Chart 4.—Antitoxin dosage in cases showing severe complications: *A*, 30 cc. (III); *B*, 10 cc. (II); *C*, 25 cc. (II). Average fever period, 11.5 days. *X*, discharge from right ear.

this time. It appears to us that even with the imperfect understanding of dosage and method at first used, the procedure has been amply justified. With the more intensive plan now in use and a better distribution of dosage, more satisfactory results from the standpoint both of percentage of successful immunization and of permanence of protection may well be anticipated. We are now employing from four to five doses of toxin, at weekly intervals, beginning with 250 to 500 and increasing each dose to make a total of 20,000 to 30,000 skin test doses, respectively, these, as before, in terms of the stronger toxin.

In connection with the discussion on adjustment of toxin concentration for making the Dick test and on the variation in amount of natural antitoxin in different individuals as indicated by the test, a case of especial interest was cited which we feel warrants more detailed description. The patient gave the largest and most intense Dick reaction we have seen, the local area of erythema being five or six times that found in the average test. A few days after injection of the usual first dose of toxin subcutaneously, that is, twenty-five skin test doses, and following a marked local reaction at the point of injection, there was general malaise of an unusual degree, moderate fever, nausea, headache, edema of the face and hands, and a definite, diffuse, smooth erythema, strikingly like the rash of scarlet fever in color. Later there was desquamation, and albumin was present in the urine temporarily. As the patient had been exposed to scarlet fever a short time before, the possibility of a coincident infection was considered; but, as the Dick test was still positive on repetition six months later, it seems clear that the disturbance was a reaction to a dose of toxin relatively large in proportion to the amount of natural antitoxin present in the body. Only the one dose of toxin was injected in this case.

ANTITOXIC THERAPY

Although we have encountered some difficulty in completely classifying the cases of scarlet fever treated with the specific serum and in placing them in definite groups with reference to the results obtained, certain lessons have been impressed on us, consideration of which may have a part in carrying out the purpose of this analysis. We believe the data recorded below bear out the published opinion of others that a true antitoxic serum has been produced.

The Schultz-Charlton reaction is a graphic means of demonstrating the antitoxic properties of a given serum. Further, in a group of seven susceptibles, a series of intracutaneous injections were made, using two toxins, one injection of a single skin test dose, and four other injections of varying mixtures of toxin and antitoxin, in each subject. In most instances both toxins were used, in two cases only one. It was found invariably that, as the proportion of antitoxin in the mixture was increased, the corresponding local reaction diminished in size or intensity or in both, even to the extent of completely negative Dick tests in most of the group, at the site of injection of the highest antitoxic concentrations.

During the fourteen months from Nov. 1, 1924, to Dec. 31, 1925, inclusive, more than 300 patients with scarlet fever were cared for at this hospital. In our study, a few cases followed under practically the same conditions of observation but not in the hospital are included. Of the entire number, thirty-five patients were given antitoxin. Three of this group are considered apart from the rest, as they were in such condition on admission that no definite or permanent effect from the use of serum could be anticipated. One of these was moribund, with pneumonia following childbirth, and died within about six hours after entering the ward. One patient (case 1, chart 5) was ill with bronchopneumonia when admitted, but recovered, a sharp though temporary drop in temperature having occurred immediately after injection of the antitoxin. The third of this separate group (case 2, chart 5) had had a fracture of the elbow before coming to the ward and was already suffering from a severe arthritis when first seen. The fracture had been considered a part of the arthritis for a number of days before admission and had caused a considerable amount of pain.

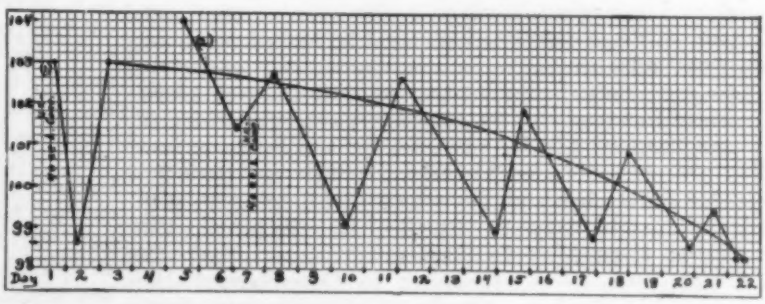


Chart 5.—1, pneumonia well established on admission; 2, arthritis, marked on admission and elbow fractured just before admission.

Charts 1, 2 and 3 represent the patients treated by antitoxin in whom there were no complications of severe degree, while chart 4 shows those who did have serious complications,[2] and chart 5, the patients with pneumonia and arthritis, who recovered and who were just referred to. The letters on the charts represent the points at which doses of antitoxin were given; the vertical numerals are degrees of temperature and the horizontal, days of the disease. The amount of each injection of anti-

2. Complications included such conditions as otitis, mastoiditis, acute parotitis, ethmoiditis with necrosis, cervical adenitis of very severe degree, pyelitis, arthritis and nephritis.

toxin is stated in the legend below the chart. In the case of antitoxin IV, the number of cubic centimeters varied, but the dose always represented sufficient to neutralize at least from 30,000 to 50,000 skin test doses, of the stronger type already mentioned, per cubic centimeter, or a total dose to neutralize at least 250,000 skin test doses.

Examination of the curves in chart 1 shows one case in which the temperature, after approaching normal, later followed a more gradual decline than at first. This patient had an extensive impetigo involving practically the entire body, and only with the clearing up of this condition did the temperature become finally established at the normal level. It will be noted that all but two of the patients represented in chart 1, and one represented in chart 3, were given two doses of antitoxin, and one in the chart 3 group was injected when the temperature had reached normal. We are satisfied that the temperature course subsequent to the various doses of antitoxin as here illustrated is more than a coincidence and must have resulted from the effect of the specific antitoxin administered. In only two instances in the groups shown in the first three charts was the injection not followed by a definite and generally continuous return of the temperature to normal, and one instance in which no effect was observed, although the temperature was high and the other when the temperature was already normal. These two cases are included, however, because we believe they bear on the problem of the relation of antitoxic treatment to the frequency of complications.

Two deaths among scarlet fever patients occurred. One of these patients was moribund, with pneumonia following childbirth, and, as stated, died a few hours after the injection of the antitoxin, and the other, in desperate condition from pneumonia, was admitted and was not given antitoxin. One other patient, ill with pneumonia when the antitoxin was administered, recovered, the temperature course being shown in chart 5, case 1. The comparatively low number of deaths in a series of 300 cases of illness of the type of scarlet fever forcibly emphasizes, by contrast, the well recognized importance of the complications as commonly encountered, and any measure which reduces the number and severity of those complications must be looked on as an important advance.

Study of the patients not treated with antitoxin during those fourteen months reveals an average incidence of complications of 17.7 per cent for the entire series. This percentage varied slightly for different periods, that for November and December, 1924, being 16 per cent; from January to April, 1925, inclusive, 22 per cent; from May to August, 1925, inclusive, 16 per cent, and from September to December, 1925, inclusive, 12.6 per cent. On the other hand, comparison with the condition in the treated patients suggests some interesting data. Including all patients but the two previously mentioned having pneumonia and arthritis, only 10 per cent of those receiving antitoxin developed serious complications. Close examination of the history, physical findings and temperature curves in cases 2 and 3 (chart 4) have convinced us that in these instances also the antitoxin was not given until after the onset of the complicating condition, in the one case a severe adenitis, in the other definite necrosis of the ethmoid. Leaving these two patients out of the group of complications beginning after the administration of antitoxin, the incidence of complications in the treated patients is 3.5 per cent.

The difference in frequency of complications in the treated and untreated patients is the more striking, as the number selected for use of the serum included only those deemed particularly ill, while those developing complications among the group not receiving serum included many of the mildest type.

With regard to the effect of antitoxin in shortening the period of acute illness, we have, of course, used the temperature course as one index. The average duration of fever in the patients in chart 1, most of them having had two doses of serum, was 10.6 days. The second injection was undoubtedly required in many of these instances because of the small amount given at first, a fact which, in our opinion, accounts for an unnecessarily long febrile period. Those in chart 2, including the case of impetigo, had an average of 5.4 days of fever, those in chart 2, 6.4 days, and the group with complications as shown in chart 4, 11.5 days. For all cases in which antitoxin was given, except the two originally excluded, the average fever period was 7.6 days, or excluding also cases 2 and 3, (chart 4), 7.3 days. The average number of fever days for the untreated patients, not including the rises of temperature accompanying many of the later complications, was nine.

While there is, therefore, an apparent gain in the average case in favor of the antitoxin with reference to the shortening of the fever period, we would emphasize again that we believe the course of the temperature following the injections is of more significance than the mere duration of fever. We are the more impressed with the correctness of this opinion when we consider the almost invariable accompaniment of slowing of pulse rate, the improvement in character of the pulse and the favorable alteration in clinical condition, strikingly similar to the changes so familiar in the treatment of diphtheria with the corresponding antitoxin.

The serum reactions have not been more severe than have been seen with diphtheria antitoxin, and the frequency and severity of these seem to be diminishing as advance in concentration methods is accomplished. We would urge caution in the matter of dosage of antitoxin, favoring rather larger doses, possibly twice that now recommended by the manufacturers, given at the earliest possible moment, rather than the smaller doses to be repeated if indicated. We are now using sufficient to neutralize between 750,000 and 1,000,000 skin test doses of toxin. All the antitoxin that we have used has been prepared after the method of Dochez, and a supply of material prepared by Dr. Dochez himself was included. Our series has not been sufficiently large and the conditions of administration have varied to such an extent that we will not venture an opinion as to which special lot of serum has given the best results, and we are now observing a series of cases treated with the most recent type of material prepared by the Dochez method and with concentration by methods similar to that used in the preparation of the diphtheria antitoxin. The results, as far as we can predict at this date, seem to compare favorably with those outlined in the foregoing analysis.

CONCLUSIONS

1. The intracutaneous injection of properly concentrated scarlet fever toxin, after the method of the Dicks, properly controlled by use in groups, is a reliable means of determining susceptibility or immunity to scarlet fever.

2. This method is also frequently of definite assistance in diagnosis.

3. It is possible actively to immunize susceptibles for a considerable period.

4. Care should be used to adjust the dose of toxin for active immunization so as to avoid serious reactions in those who may have an unusually small amount of natural antitoxin, as indicated by an unusually large and intensely positive Dick reaction.

5. There is ample evidence that the serum prepared by the method of Dochez now available for the treatment of scarlet fever possesses true and specific antitoxic properties in effective concentrations.

6. The early use of sufficient amounts of antitoxin apparently reduced the incidence of complications of severe degree.

7. A single large dose of antitoxin will probably prove more satisfactory, from every standpoint, than a small or moderate dose with the possibility of repetition.

8. The intramuscular injection appears to be satisfactory in practically all cases, the intravenous possibly being indicated in critical conditions.

9. We suggest the advisability of testing all patients for sensitiveness to serum before giving the antitoxin, even though workers are not in complete agreement as to the importance of this procedure.

THE NASAL PASSAGES IN LOBAR PNEUMONIA

A CLINICAL AND BACTERIOLOGIC STUDY *

A. R. FELTY, M.D.
HARTFORD, CONN.
AND
C. A. HEATLEY, M.D.
BALTIMORE

The frequency of pneumococcal infection of the paranasal cavities in lobar pneumonia was noted by Darling [1] in 1906, when he demonstrated acute inflammatory changes due to that organism in one or more nasal sinuses in more than 90 per cent of a series of pneumonia cases in which he performed necropsies. These findings have been confirmed in a much larger series of necropsies.[2] Darling's belief was that "the portal of entry of the pneumococcus in most instances is an accessory nasal sinus, the mucous membrane of which is probably fitted for the reception of the pneumococcus by an antecedent influenza or rhinitis." Little investigation has been made of the nasal passages and sinuses during the course of lobar pneumonia. In a series of thirty-five cases, Stillman [3] took cultures of the nose by introducing a swab into the nostrils, and in fifteen cases isolated the pneumococcus, though not always of the same type as that recovered from the sputum. No reference has been found in the literature to clinical observations of the nasopharynx in this disease.

In this study, nasopharyngoscopic examinations were made in a small group of cases of lobar pneumonia. Wherever possible, the sinuses were studied roentgenographically. Simultaneously, cultures of the nasal passages were made in an effort to correlate, if possible, the bacteriologic and clinical data thus obtained.

* From the Departments of Medicine and Laryngology, Johns Hopkins Hospital and University.

1. Darling, S. T.: The Accessory Nasal Sinuses and Pneumococcus Infections, J. A. M. A. 47: 1561 (Nov. 10) 1906.
2. Darling, S. T.: Personal communication to the authors.
3. Stillman, E. G.: J. Exper. Med. 35: 7 (Jan.) 1922.

METHODS

The nasal passages were first examined through a speculum. The mucous membranes, which were usually edematous, were then shrunken with pledgets moistened with cocaine (10 per cent solution) and epinephrine (1:1,000). A satisfactory view of the middle and superior meatus was thus obtained. Examination was made with a nasopharyngoscope giving a direct image. In some cases anteroposterior roentgenograms of the sinuses were taken. Cultures were obtained by applying a swab beneath the middle turbinate bone on each side, a sterile nasal speculum being used and contact with the tissues of the vestibule being avoided. The material was thus obtained at the point of drainage of the maxillary, frontal and anterior ethmoid sinuses. The material was injected into the peritoneum of a mouse, and in certain cases cultures were grown on rabbit's blood agar plates (p_H 7.8). The pneumococcus obtained was typed by agglutination with the three serums, and bile solubility was determined. The pneumococcus isolated from the sputum was studied by the same method. Blood cultures were made on all patients.

Eleven patients, four of whom had never had pneumonia, and seven of whom had had the disease in the hospital within the preceding eighteen months, were used as controls. Cultures of the nasal passages were taken, the material being obtained from the middle meatus on each side. In nine of the eleven cases, no pneumococci were isolated from the nose. From two of the patients who had previously had pneumonia, pneumococcus type IV was obtained, which did not correspond to the type that had caused the disease.

In ten cases there was obtained a history of an antecedent rhinitis of from three to fourteen days' duration. In a few instances, the patients had noted frontal or general headaches. In view of the fact that most of these patients were unintelligent and presumably unobservant, this percentage is probably lower than it might have been if the patients had belonged to a more educated and selected group.

The occurrence of rhinitis preceding the onset of pneumonia has been noted by many writers. In Cole's [4] large series, almost 40 per cent of the patients gave a history of coryza antedating the pulmonary infection. Cole says: "When patients are carefully examined, it will be found that, in a surprisingly large number of instances, symptoms referable to the respiratory tract have preceded the actual onset of the disease for a period of a few days to several weeks."

Patients seen early in the disease uniformly showed diffuse hyperemia of the entire mucosa. The mucous membranes of the turbinates were commonly swollen and engorged, so that the breathing space was often greatly reduced. Tiny bleeding points representing superficial ulcerations were seen in some cases. Mucoid discharge along the floor of the nose was occasionally observed. In six cases there was a frankly purulent discharge around certain of the sinus orifices (usually the maxillary, frontal and anterior ethmoid).

While it was hoped that roentgen-ray examination of the sinuses might be obtained in every case, this was not possible in numerous instances on account of the severity of the patient's illness, or the inability of the patient to assume the position necessary for the proper exposure, or for other considerations. In the eight cases in which the sinuses were roentgenographed, seven showed clouding of one or more nasal sinuses. In the

4. Cole, Rufus, in Nelson: Loose Leaf Medicine 1: 229.

one case in which the sinuses were "clear," the examination was not made until the second day after the crisis. In five of the seven cases, nasopharyngoscopic examination indicated the presence of purulent sinusitis. The two other cases showed hyperemia of the mucous membranes, one with mucoid discharge. It seems highly likely that had lateral and anteroposterior roentgenograms of the sinuses been made in all cases, other instances of sinus involvement might have been recognized.

TABLE 1.—*Results of Nasopharyngoscopic and Roentgen-Ray Examinations*

Nasopharyngoscopic Examination	Roentgen-Ray Examination	
Purulent discharge	"Clouding" of sinus	5
Hyperemia and mucoid discharge	"Clouding" of sinus	1
Hyperemia	"Clouding" of sinus	1
Purulent discharge	Not made	1
Hyperemia	Sinuses "clear"	1
Hyperemia and mucoid discharge	Not made	2
Hyperemia	Not made	4
Not made	Not made	1
Total		16

In every case during the acute stage of the illness, the pneumococcus was isolated from the middle meatus of the nose. The pneumococcus invariably corresponded in type to that found in the sputum and in the blood. During convalescence, pneumococci could not be isolated from the middle fossae of the nose in those instances in which cultures were made.

In view of the regularity with which the pneumococcus was recovered from the nasal passages during the active stage of the disease, it seems likely that nasal culture may offer a method for the isolation and typing of the organism in the occasional case in which no sputum is obtainable.

COMMENT

Since Darling's communication in 1906 presenting his necropsy studies of the paranasal sinuses in lobar pneumonia and other pneumococcal infections, few data have been accumulated bearing on this subject. If Darling's surmise is substantiated that the portal of entry of the pneumococcus may be a paranasal sinus, the route by which the organism reaches the lung, whether bronchial, lymphatic or blood vascular, is not known. Sinus discharges might go directly down the bronchial tree, and the work of Blake and Cecil [5] shows that pneumonia can be produced by intratracheal injection of minute doses of pneumococci. The studies of

5. Blake, F. G., and Cecil, R. L.: J. Exper. Med. **31**: 445 (April) 1920.

TABLE 2.—*Findings in Sixteen Cases of Lobar Pneumonia*

Case	History of Preceding "Cold"	Nasopharyngoscopic Examination	Roentgen-Ray Examination of Sinuses	Nasal Cultures: During Disease	Nasal Cultures: During Convalescence	Sputum Culture	Blood Culture	Lobe of Lung Involved	Comment
1	"Cold" several days; nasal discharge (right); frontal headache (right)	Moderate diffuse hyperemia; antrums clear on transillumination	Not made	Pneumococcus type I	Not made (death)	Pneumococcus type I	Pneumococcus type I (500 colonies per cc.)	Left upper Left lower Right middle	Patient died
2	"Cold" for 1 week	Marked diffuse hyperemia; mucoid discharge	Not made	Pneumococcus type I	No pneumococci	Pneumococcus type I	Negative	Left upper	
3	No note of "cold"	Diffuse hyperemia	Not made	Pneumococcus type IV	No pneumococci	Pneumococcus type IV	Pneumococcus type IV	Left upper	
4	Severe "cold" 2 weeks nasal discharge; frontal headache	Mild hyperemia; pus draining from both middle meatuses; antrums dark on transillumination	Clouding of antrums	Pneumococcus type I	No pneumococci	Pneumococcus type I	Pneumococcus type I	Right upper Right middle	Nasopharynx became normal during convalescence
5	No note of "cold"	Not examined during illness	Not made	Pneumococcus type I	No pneumococci	Pneumococcus type I	Negative	Right lower	Nasopharynx normal in convalescence
6	No note of "cold"	Hyperemia; crusted discharge; mucopurulent discharge in adenoid region	Clouding of right antrum	Pneumococcus type IV	Not made	Pneumococcus type IV	Negative	Left lower	
7	"Cold" several days	Purulent discharge from left side	Clouding of left antrum	Pneumococcus type IV	Not made	Pneumococcus type IV	Negative	Right middle Right lower	
8	"Cold" for 3 days	Marked diffuse hyperemia; mucopurulent discharge from middle meatus of both sides	Clouding of both antrums	Pneumococcus type I	No pneumococci	Pneumococcus type I	Negative	Right lower Left lower	
9	"Cold" for 10 days	Diffuse hyperemia; purulent discharge from left middle meatus	Not made	Pneumococcus type IV	No pneumococci	Pneumococcus type IV	Negative	Right lower Right middle	
10	"Cold" for 1 week nasal discharge	Slight diffuse hyperemia	Not made	Pneumococcus type II	Not made (death)	Pneumococcus type II	Pneumococcus type II (75 col. per cc.)	Right lower	Patient died
11	"Cold" for several days	General hyperemia	Clouding of both antrums	Pneumococcus type II (atypical)	Not made	Pneumococcus type II (atypical)	Negative	Right lower	
12	No "cold"	Diffuse hyperemia	Sinuses clear	Pneumococcus type I	Not made	Pneumococcus type I	Negative	Right upper Right lower	Nasopharyngoscopic and roentgen-ray examinations made 2 days after crisis
13	"Cold" for several days with headache	Marked general hyperemia	Not made	Pneumococcus type IV	Not made	Pneumococcus type IV	Pneumococcus type IV (2 col. per cc.)	Right upper Right lower	
14	No note of "cold"	Marked general hyperemia; mucoid discharge, especially on the left side	Clouding of left antrum	Pneumococcus type I	No pneumococci	Pneumococcus type I	Negative	Right lower	
15	"Cold" for 4 days	Slight diffuse hyperemia with mucoid discharge	Not made	Pneumococcus type IV	Not made	Pneumococcus type IV	Negative	Left lower	
16	No note of "cold"	Diffuse hyperemia; purulent discharge from both middle meatuses, especially the right	Clouding of antrums	Pneumococcus type IV	Not made	Pneumococcus type IV	Negative	Left lower	

Mullen [6] indicate that in the rabbit, at least, lymphatic drainage of the maxillary and frontal sinuses is quite direct by way of the submaxillary and deep cervical nodes, to the cervical lymph ducts and the great veins. Carbon suspensions injected into the antrums could be traced along this course. Mullen's investigation was prompted by his observation of the frequent coincidence of sinus infection and bronchiectasis; indeed, he states that he has seen no cases of nonobstructive bronchiectasis without an accompanying sinusitis. It is a matter of common experience to observe the coincidental occurrence of acute sinusitis and bronchopneumonia, in which the history would indicate the sinusitis as the prior infection, and in which the sputum and nasal discharges contain the same offending organism. While no attempt is made to draw any analogies between the two types of pneumonia, the occurrence of acute sinusitis as an accompanying infection in both diseases is of interest and of possible significance.

It is quite impossible to determine from existing data whether the paranasal sinusitis, when present, precedes or develops, *pari passu*, with the lobar pneumonia. The possible rôle of acute pneumococcal infection of the sinuses in the pathogenesis of lobar pneumonia cannot be considered until its temporal relationship to the pneumonia is settled. Suggestive, perhaps, is the history elicited from a considerable percentage of patients of a "cold" preceding the onset of the pneumonia; though how many of these preliminary "colds" are actually cases of pneumococcal sinusitis is not known, since rhinitis is too common a malady to admit of such exhaustive study as a routine. Darling states that, in the cases he studied, the age of the sinus infection was appreciably greater than that of the lung or meningeal lesion, though he does not give his criteria for drawing such conclusions. Whatever may be the etiology of the antecedent "cold," as soon as attention is called to the patient by the acute symptoms of the pulmonary infection, one finds in a certain percentage of cases (a figure varying probably with the degree of care taken in studying the patient) definite clinical, roentgenologic and bacteriologic evidence of acute pneumococcal sinusitis. This extrapulmonic infection appears to occur sufficiently frequently to receive more than a casual consideration. Even if it plays, contrary to Darling's belief, no part in the primary disease process, the evidence indicates that it is a common and early complication of lobar pneumonia.

The series of cases here reported is too small to warrant the drawing of definite conclusions. The results are sufficiently striking, however, to encourage further investigation of this phase of the disease.

SUMMARY

1. In a series of sixteen cases of lobar pneumonia, pneumococci of corresponding type to those found in the sputum were isolated from the middle fossae of the nose in every case.

2. The nasal passages in fifteen of the sixteen cases were examined with the nasopharyngoscope; of these, all showed hyperemia of the mucous membranes, and six had signs of acute suppurative sinusitis. In eight cases, anteroposterior roentgenograms of the sinuses were made; in seven cases, clouding of one or more of the sinuses was observed.

3. In this small series of cases, acute pneumococcal sinusitis was a frequent accompaniment of lobar pneumonia.

6. Mullen, W. V.: Tr. Am. Laryngol., Rhinol. & Otol. Soc., 1921, p. 294.

PUERPERAL FEVER

II. STREPTOCOCCUS HEMOLYTICUS TOXIN AND ANTITOXIN *

ABRAHAM F. LASH, M.D.
AND
BERTHA KAPLAN, M.S.
CHICAGO

In June, 1925, we [1] reported the presence of a toxic substance in the Berkefeld V filtrate of broth cultures of *Streptococcus hemolyticus* isolated from the blood of patients with puerperal fever. Intracutaneous injections of the filtrates (sterile) produced inflammatory reactions, which varied in degree and incidence with the dilution of the filtrate and the presumable immunity of the patient. There was a definite latent period between injection and reaction.

The present report concerns experiments with the toxic substance in the filtrate, which were carried out in order to determine further characteristics of a toxin and the specificity of the organism. Strain A of our puerperal streptococci and the Berkefeld V filtrate of its cultures were used exclusively in the study.

HEAT LABILE PROPERTY

One cubic centimeter of the 1:100 dilution of the filtrate was heated in a water bath at 70 C. for fifteen minutes and a similar amount at 90 C. for sixty minutes. Intracutaneous tests were made on five pregnant women (at term) known to be strongly positive to the 1:1,000 dilution. In three, the tests were negative, while in one, it was slightly positive and in another positive. The positive reactions can be explained by a hypersusceptibility of the two patients to the proteins in the heated filtrate. The negative tests were due to the destruction of the toxic substance in the filtrate by heat.

NEUTRALIZATION

The immune serum was prepared in a rabbit by repeated intracutaneous injections of the undiluted filtrate. The initial dose was 5 cc., gradually increased until 13 cc. was given. Twenty-five injections were given at intervals of three days. A control serum was obtained from a nonimmunized rabbit. Equal amounts of the diluted filtrate (1:500 and 1:100) and of the immunized and nonimmunized serum were mixed and allowed to incubate for one hour at 37.5 C. Ten patients (pregnant women at term) who gave a positive test with the 1:1,000 dilution of the filtrate were inoculated intracutaneously with 0.2 cc. of the foregoing mixture. Thus, each patient received four injections, the 1:100 filtrate plus immune serum, 1:100 plus (nonimmune) control serum, and the 1:500 filtrate with similar combinations. In the control tests, strongly positive reactions occurred in twenty-four hours, while in those with the immune serum no reaction occurred except in one having a positive and in two only slightly positive reactions. Therefore the toxic substance in the filtrate was neutralized by the immune serum (antitoxin) with the stated exceptions, which were probably due to a very slight amount of toxin remaining active for hypersusceptible patients from incomplete neutralization by insufficient antitoxin.

* From the Departments of Bacteriology and Pathology, and Gynecology, of the University of Illinois.

1. Lash, A. F., and Kaplan, Bertha: Puerperal Fever: Streptococcus Hemolyticus Toxin, J. A. M. A. 84: 1991-1992 (June 27) 1925.

PRECIPITIN TESTS

Equal amounts of the diluted serum and the centrifugalized, clear, supernatant fluid of forty-eight hour dextrose broth cultures were mixed and incubated at 37.5 C. dry heat for from twelve to fifteen hours, and readings were made after two and fifteen hours. The results are given in the accompanying table.

Results of Precipitin Tests

Strains of Streptococcus H	Serum of Rabbits Injected with— Toxin Intracutaneously	Toxin and Strept. Hem. Intracutaneously	Toxin Intravenously
Puerperal A	160	320	160
Puerperal A¹ *	80	...	...
Puerperal B	160	80	80
Puerperal C	0	40	80
Erysipelas 1	40	40	80
Erysipelas 2	80	..	..

* Puerperal A¹, after passage through a rabbit.

Although the results of the precipitin tests demonstate a nonspecificity of the strains of *Streptococcus hemolyticus* isolated from puerperal fever, yet they indicate a relationship between these strains.

ACTIVE IMMUNIZATION

Two forty-eight hour blood-agar slants of the puerperal strain A suspended in sterile physiologic sodium chloride solution were found to be the lethal dose in a rabbit (800 Gm.) after intravenous injection, in twenty-four hours. Necropsy revealed no gross pathologic changes, but cultures of the heart blood and peritoneal fluid (normal amount) yielded hemolytic streptococci. A rabbit (800 Gm.) was immunized with the undiluted toxin produced by the organisms isolated from this rabbit. Four injections were given intravenously in 9 cc. doses at intervals of three days. One week after the last injection, two forty-eight hour blood-agar slants of the puerperal strain A were injected intravenously. The animal was not affected and, when killed one month later, no pathologic changes were found.

In a series of rabbits, the virulence of *Streptococcus hemolyticus* was studied. Two forty-eight hour blood-agar slants injected intravenously were found to be the lethal dose. Three cubic centimeters of the toxin killed rabbits in twenty-four hours when given intravenously. One half of a forty-eight hour blood-agar slant combined with 2 cc. of the toxin injected intracutaneously proved fatal to two rabbits (800 Gm.). However, there was a great variation in the amounts of the organisms and the toxin given separately or combined necessary to kill rabbits of the same size. Also in the female rabbit no specific or selective property of the puerperal *Streptococcus hemolyticus* was observed. The nonspecificity of *Streptococcus hemolyticus* in the chronic infection of the fallopian tubes and cervix was demonstrated in a recent study.[2]

CONCLUSION

The toxic substance in the sterile Berkefeld V filtrate of puerperal *Streptococcus hemolyticus* broth cultures is a toxin because:

1. There is a latent period between injection and reaction.

2. The toxic substance in the filtrate is heat labile.

3. It is neutralized by immune serum (antitoxin) and not by nonimmune serum.

4. The precipitin tests further show the development of immune bodies by the toxin.

5. The repeated injections of the toxin produced sufficient antitoxin to protect rabbits against the lethal dose of the puerperal *Streptococcus hemolyticus*.

2. Barrett, C. W.; Lash, A. F., and Pilot, Isadore: A Study of Streptococci from Chronic Infection of the Cervix Uteri and Fallopian Tubes, Am. J. Obst. & Gynec. **9**: 797 (June) 1925.

LONG STANDING ANURIA

CERTAIN ASSOCIATED PHENOMENA

W. A. MYERS, M.D.
KANSAS CITY, MO.

Recently I [1] reported a case of anuria in which there was no evidence of urine having been passed for thirty days. Until this case was seen it had never been brought to my attention that a complete suppression of urine could possibly exist for more than five or ten days. Every day, therefore, not only the attendants at the bedside, but also the physicians in charge expected dissolution. I have since found other cases in the literature and included in the report a collection of those having a duration of from twenty to twenty-nine days, and some of even longer duration. However, I have been unable to find a report of a case due to recurrent carcinoma with such a history.

The patient was a woman, aged 64, who had had a polypoid type of cervical growth for years, which was finally removed with the uterus by vaginal hysterectomy. From a careful history of the case there was no reason to think that recurrence of the carcinoma ever attacked the vesical, vaginal or rectal wall, but both history and necropsy definitely pointed to the recurrence in the lymphatics and tissues on each side of the cervix; that is, around the ureters just before their entrance into the bladder. Pressure symptoms of a pelvic mass arose on the right side at least five months before the onset of anuria, and at necropsy both the mass and the hydronephrosis were larger on this side. The symptoms of intoxication, marked by frequent vomiting, began at least two months before anuria developed. Complete occlusion of the ureters, there is reason to believe, was very gradual, and occurred first on the right side, renal function being assumed partially by the remaining kidney, up to the time when the left kidney was likewise occluded, on or before Aug. 22, 1923, the date alleged as the beginning of complete anuria.

This interpretation coincides with the dictum of authorities,[2] which has generally been accepted, that longstanding obstructive anuria may occur only in those who have been living through the function of one kidney. Thus, the prerequisites for a longstanding obstructive anuria seem to have been fulfilled in this case. The gross appearance of the recurrent masses entirely compressing the ureters for several centimeters on each side seems ample evidence to justify this interpretation. As a rule, both the physiologist in his laboratory and the clinician at the bedside are in perfect accord that complete anuria of only a few days' duration is extremely perilous to life. There is definite variability, apparently, between the tolerance of different species of animals to renal intoxication; for,

1. Myers, W. A.: Obstructive Anuria: Report of a Remarkable Case, J. A. M. A. **85**: 10-13 (July 4) 1925.

2. Hutchinson, J.: Suppression of Urine as a Consequence of Renal Calculus, Lancet **2**:1-3, 1874. Fowler, E. P.: Suppression of Urine, New York, William Wood & Co., 1881. Legueu, F.: De l'anurie calculeuse, Ann. d. mal. d. org. gén.-urin. **13**: 865-910, 1895.

according to Amos,[3] guinea-pigs after unilateral ureteral obstruction lived, on an average, nineteen and one-half days, whereas rats, under the same conditions, lived, on an average, fifty-two days; but in each species when "both ureters were tied the animal died in two days." Caulk [4] says: "I have never seen an animal with both ureters simultaneously ligated which did not die within four or five days." By two stage double nephrectomy, however, Vitzou [5] claims that he has kept animals alive for as high as from 146 to 164 hours by no other measure than the injection of blood serum from renal veins of healthy animals of the same species. This he interprets as due to the internal secretion of the kidneys. Allen, Scharf and Lundin [6] report that whereas dogs die in two days with double nephrectomy, sheep and goats live for two weeks. Papin and Chabanier,[7] however, refer to clinical anuria, following nephrectomy of the only kidney in man (about ten cases) death occurring "about the tenth or twelfth day." I have collected from American literature records of three clinical cases, mentioned below, each patient having lived more than ten days after the removal of the only kidney.

The nearest approach we have clinically to the experimental conditions of bilateral ureteral obstruction are those cases collected by Bland,[8] sixty-one in all, in which both ureters were accidentally tied at operation. The anuria of these surgical cases was terminated as a rule within ninety-six hours, so that we have found no cases of long standing anuria among them. In the event of a surgeon accidently tying both ureters in patients presumably not suffering from renal intoxication, the shock of a difficult operation added to the anesthesia, and the instantaneous injection of all urinary toxins into the organism, consistently results fatally in a very few days unless at least one ureter is released mechanically. If, however, the patient is accustomed to renal poisons, at the time of operation, as in the cases in which diseased solitary kidneys have been removed, long standing anuria may result. Apart from the cases of long standing anuria, surgically produced, it is valuable to leave the laboratory and operating room, and search the literature for cases of anuria before surgery was generally utilized, or in present day cases in which its proffered hand of help, as in our own case, has been refused. Among the cases treated nonsurgically, we find reported those who suffered as a rule from very gradual renal intoxication. To one unfamiliar with the condition of long standing anuria, the records collected below may seem almost incredible. Yet many of the cases are reported with records quite exact, and observations apparently quite accurate. Furthermore, the authors are in many instances widely known, and are of accepted veracity.

In this communication I prefer to neglect the cases in the literature, which are numerous, with an anuria of less than ten days, and record the following collection, no doubt incomplete, of total anuria with a duration of from ten to nineteen days. A recent collection of cases in excess of nineteen days was given in my original report.[8a] In the present collection, there are cases representing "prerenal," "renal" and "postrenal" anuria. Of anuria cases apparently complete, I have found seven cases of ten days;[9] eight cases of eleven days;[10] eight cases of twelve days;[11] ten cases of thirteen days;[12] three cases of fourteen days;[13] five cases of fifteen days;[14] six cases of seventeen days;[15] two cases of eighteen days,[16] and two cases of nineteen days.[17] There are doubtless other cases reported or unreported but familiar to the reader, which I have failed to incorporate in this collection of fifty-one cases. The foregoing cases will at least illustrate the point that anuria in man is possible of being complete and of long duration, and apparently may be definitely longer in the clinic than in the experimental laboratory with present methods of study.

If these reports are accurate, we are led to search for some explanation for the tenacity of life in such a prolonged uremic poisoning. Such cases of chronic uremia may possibly be explained on one or more of the following derangements of physiologic processes:

1. In long standing anuria there may be a lowered metabolism.

2. In long standing anuria, natural protective forces develop a defense against the peril of deranged metabolism.

3. In long standing anuria, the nitrogenous products may be eliminated vicariously.

LOWERED METABOLISM IN TOTAL ANURIA

I have been unable to find in the literature a case of total long standing anuria with careful reports of basal metabolic rates. The clinical description of chronic uremia from total renal insufficiency of long duration is distinctive. Such authors as Sinkler [18] and Senator [19] indicate that, in the typical cases, a chronic uremia develops in man a condition approaching hibernation found in animals. Describing the metabolic processes of his case of "hysteric anuria," Charcot said, the vital "fires are covered with ashes." Catabolic processes apparently do not break down the nitrogen products or oxidize with even normal rapidity carbohydrates and fats. In the absence of exact quantitative metabolic studies, it seems fair to rely on the clinical triad of hypometabolism; namely, reading of pulse, temperature and respirations. In this type of chronic uremia, respirations may not be high, Fowler putting the average at about 18, but they may be as low as 15, 12, 8 or 6 per minute,[20] or even as low as 4 per minute.[1] In long standing cases uncomplicated by fever, the pulse is not commonly increased. Bradycardia may even prevail;[21] 70 or lower, even 40 has been reported.[19] If unassociated with infection, the temperature is rarely high and may be frequently normal or low,[21] 97.6 F., 92.8 F.[1] or 86 F.[19] My own case confirms the foregoing throughout, and the reduced metabolism seems a rational explanation of the interesting blood urea nitrogen studies in my case. At first blush, it would seem that anuria of many days would have accumulation of nitrogenous bodies in the blood, extremely high. Judging from the urea nitrogen studies in my case, however, this urea nitrogen increased only 30 per cent in the last fifteen days of anuria—from 130 to 169 mg. per hun-

3. Amos, B.: The Effects of the Ligature of One Ureter, J. Path. & Bacteriol. **10**: 265, 1905.
4. Caulk, J. R.: Calculous Anuria, Atlantic M. J. **27**: 401, 1924.
5. Vitzou, A. N.: Experimental Researches on the Internal Secretion of the Kidney, Bucharest, 1902.
6. Allen, F. W.; Scharf, Rudolph; and Lundin, Harry: Clinical and Experimental Renal Deficiency, J. A. M. A. **85**: 1698 (Nov.) 1925.
7. Papin, E., and Chabanier, H.: Etude clinique, physiologique et anatomique de deux cas d'anurie, J. d'urol. **8**: 335, 1919.
8. Bland, P. B.: The Treatment of Accidental Occlusion of the Ureter, Atlantic M. J. **27**: 341-351 (March) 1924.
8a. Myers (footnote 1). Farnsworth (footnote 27).

9-17. References 9-17, inclusive, will be found in the author's reprints. They are omitted from THE JOURNAL on account of lack of space.
18. Sinkler, W.: Suppression of Urine of Long Standing Without Symptoms of Uremia, Tr. Coll. Phys., Philadelphia **18**: 121, 1891.
19. Senator: Diseases of the Kidneys, in Nothnagel's System, American edition, Philadelphia, W. B. Saunders Company, 1905.
20. Senator (footnote 19). Frank (footnote 15).
21. Fowler (footnote 2).

dred cubic centimeters of blood. Anuria of much shorter duration has been recorded at much higher figures of urea nitrogen retention in the blood, but such cases, it will be found, were types of relatively acute uremia compared to the case being discussed, and may possibly be explained on a basis of reduced vicarious elimination, to be discussed below. Not only are the pulse, respiration and temperature quite characteristically not increased, but the drowsiness reduces the bodily activity to the minimum. In the absence of exact basal metabolic rates, it would seem that certain cases of long standing anuria may, from a metabolic view, be likened to vegetative types.

PROTECTIVE FORCES IN TOTAL ANURIA

The study of lowered metabolism does not alone explain why one could survive for days without any urinary excretion. Many a patient has succumbed to uremia with much less urea nitrogen concentration in the blood stream than occurred in the cases reported. On the other hand, many cases of renal insufficiency with or without anuria, with much higher nitrogenous products in the blood, are reported. Scholl and Foulds [22] report a fatal case of relative anuria of thirteen days, with total anuria of eight days, in which the blood urea at one time was 527 mg. per hundred cubic centimeters. Mosenthal and Lewis [23] report a case of polycystic kidney in a business man with renal insufficiency without anuria, who was alleged to be quite comfortable with his routine business matters for a period in excess of a year in spite of a blood urea nitrogen around 118 mg. per hundred cubic centimeters. Sweet [24] has indicated that not all renal insufficiency cases are absolute suppression of urine cases—that the protective mechanism against renal poison is identical in the "specific" or absolute anuric cases and in the "essential" anuric cases, in which certain low specific gravity urine may be passed. The patients in each type are poisoned and, as he has indicated, may die suddenly or may live a number of days. Each type, amply proved clinically and experimentally, may have not only marked nitrogen retention but also acidosis of high grade, the latter evidenced by high inorganic phosphorus and low carbon dioxide combining power of the blood plasma. Peculiarly enough, also, evidence has accumulated both by experimental and by clinical study that renal insufficiency of high grade may be associated with neither hypertension nor edema. Marked sodium chloride retention probably does not occur, and vomiting commonly present in long standing anuria may regulate the blood chlorides, as it apparently does in cases in intestinal obstruction.[25]

It seems now quite certain that, with absolute renal insufficiency in man and animals, marked nitrogen retention and acidosis consistently results. Likewise, careful study of the literature on anuria indicates that a very slow urinary intoxication seems a prerequisite for long standing vital resistance to the cumulative chemical and physical changes in the blood and the tissues. Feeding food with high sodium chloride and nitrogen producing content apparently hastens death.

One of the protective forces against renal intoxication has been thought to be the internal secretion of the kidney. In most of the clinical cases of long standing anuria there is renal tissue with circulation intact, and it is conceivable that internal secretion of the kidney is a factor. However, certain notable cases in American literature militate against this theory, as in Polk's [26] case of anuria of eleven days, Farnsworth's [27] of twenty-three days, and Gordon's [28] of twenty-seven days it was shown by necropsy that the only kidney had been removed, in each case a pathologic one. This would rather lead one to think that bodily tissues, other than renal, by meeting the gradually increasing intoxication, had built up natural defenses to protect against any renal catastrophe, with its lethal processes.

In the case that I reported, the patient, according to the history, had been definitely intoxicated for weeks before anuria developed and was apparently definitely protected, as it were, against these processes before the crash of anuria developed. For such a biochemical battle, the organism must be forewarned in order to be forearmed. How shall we know of the mechanism of this defense until we know what is the lethal agent? Perhaps a true antitoxin is formed; it takes time for this type of protection to be established, either experimentally or clinically. Could we produce in the sheep or goat a chronic nephritis analogous to that found in man, subsequent total renal extirpation might presumably produce anuria identical in duration to that found clinically, and opportunity thus be created for study of these extremely important protective forces.

VICARIOUS ELIMINATION

A typical case of anuria, such as mine or many others recorded, may conceivably present a lowered metabolism; there may even have been gained a prolonged tolerance to the deranged metabolic processes that usually kill in a very few days, and yet not all cases of chronic total anuria may be explained without an additional factor. The literature of our fathers more than of today explained the life in prolonged anuria on the basis of "vicarious elimination." By this term many older clinicians held, and modern students have not disproved, the hypothesis that in these cases poisons were eliminated, and processes of adaptation were carried on, by other than renal organs.

In a certain percentage of reported cases of total anuria of long duration in which careful studies have been made, there is evidence of compensatory elimination by other organs, notably the skin, gastro-intestinal tract and the lungs. Perspiration in long standing anuria is noted very frequently; some patients sweat freely, others less. It is possible, according to von Noorden,[29] to excrete as high as 3 Gm. of nitrogen daily through the skin.

We cannot neglect the possibility of the lungs being a means of compensatory elimination of nitrogen. Certain writers speak of the "urinous," "ammoniacal" or "foul" odor to the breath. Roberts believes that such elimination does not occur. Certainly, no urinous or ammoniacal odor was noted in my case, though the breath was definitely foul.

Wolff [30] has produced hydramnion in pregnant rabbits by ligating both ureters, and it is his opinion that

22. Scholl, A. J., Jr., and Foulds, G. S.: Prolonged Anuria, J. A. M. A. **76**: 368 (Feb. 5) 1921.
23. Mosenthal, H. O., and Lewis, D. S.: A Comparative Study of Tests for Renal Function, J. A. M. A. **67**: 933-938 (Sept. 23) 1916.
24. Sweet, J. E.: Some Theoretical Aspects of the Problem of Anuria, Atlantic M. J. **27**: 405 (April) 1924.
25. Haden, R. L., and Orr, T. G.: Use of Sodium Chloride in the Treatment of Intestinal Obstruction, J. A. M. A. **82**: 1515 (May 10) 1924.
26. Polk, W. M.: Case of Extirpation of a Displaced Kidney, New York M. J. **37**: 171, 1883.
27. Farnsworth, A. H.: Complete Anuria, J. A. M. A. **85**: 1420 (Oct. 31) 1925.
28. Gordon, S. C., cited by Howe, H. P.: An Unusual Case of Suppression of Urine, New York M. J. **84**: 1186, 1906.
29. Cited by Brown, W. L.: The Factor in Uremia, Proc. Roy. Soc. Med. **16**: 43, 1923.
30. Wolff, B.: Ueber experimentelle Erzeugung von Hydramnion, Arch. f. Gynäk. **71**: 224-257, 1904.

the amnionic sac and the renal pelvis of the hydronephrotic kidney act in identical function as reservoirs for vicarious nitrogenous elimination. Necropsy showed that our patient had 500 cc. of pleural fluid; this may have acted as a safety reservior for partial elimination of the toxic agents.

The gastro-intestinal tract, however, is probably the most frequent and efficient means of vicarious nitrogenous elimination in anuria. Vomiting may be one of nature's protective mechanisms in anuric uremia. Charcot's patient vomited daily, and his analysis, though made with rather unrefined methods, showed urea present in the vomitus, so that he taught that the stomach was one of the eliminating organs in cases of anuria. It has been asserted that the stomach may even assume the rôle of concentration of nonprotein nitrogen products of the blood. I have never been able to confirm this. However, Canti [29] in one case found the blood urea 300 mg. per hundred cubic centimeters but the vomitus 600 mg., and von Noorden [29] believes that the gastro-intestinal tract is able to eliminate as much as 8 Gm. of nitrogen daily.

The excretory function of the stomach may be an important factor in the control of renal acidosis, it having been shown that vomiting is at times associated with a tendency to alkalosis, and this tendency to combat renal acidosis may possibly be of extreme value in long standing anuria. Stomach excretions, like urinary excretions, are acid, and it is conceivable that vicarious elimination of acid bodies through excessive vomiting may avert a fatal renal acidosis.

Even the salivary glands may excrete a certain amount of nitrogen, profuse salivation being mentioned in certain cases of long standing anuria. Hench and Aldrich [31] have shown that excretion of urea nitrogen through saliva is in definite proportion to the concentration of the blood.

While vicarious elimination alone might maintain life in the face of overwhelming intoxication, it is obvious that unless fluids were given freely, or some organ of excretion actually concentrated, very definitely, dehydration would exceed the detoxication, and the toxic products would conceivably reach very high percentages. If, however, as has been asserted, the stomach may concentrate its elements, the nitrogenous bodies of the blood may not, of necessity, be markedly increased as the anuria persists. While certain cases in the literature are marked by excessive vomiting, others are reported with complete absence of such compensatory elimination through vomiting, perspiration, diarrhea or salivation even in prolonged anuria. My patient vomited daily during the period of anuria, and was alleged to have done so for weeks previously, and had at times during the observation spontaneous profuse sweats.

On the basis of von Noorden's data, given above, of the possibility of the skin and gastro-intestinal tract eliminating as much as 11 Gm. of nitrogen daily, the equivalent of approximately 23 Gm. of urea might thus be eliminated each twenty-four hours with renal function in absolute abeyance. This is of extreme interest in the study of the tenacity of life in long standing anuria.

COMMENT

How long is total anuria compatible with life? Certain authors believe that this may depend on a number of factors, among which are those mentioned above; namely, the lowered metabolism, gradual onset, and compensatory elimination. My patient had a cancer that was destroying life. Certain cases reported, in which there was no primary death-producing illness, but anuria of long standing, lead one to believe that the organism when given fair warning, and sufficiently gradual intoxication, may fortify itself against enormous poisoning. Scarpini [32] in the discussion of his case, in which there was alleged to have been a complete urinary suppression of several months' duration, apparently believes that metabolism compatible with life in total anuria may, under ideal conditions, be "carried on indefinitely."

Hypothetically, this may be possible. However, a much wiser working point of view for the therapeutist is that suppression of urine at any stage is dangerous; after five days it is liable to end fatally at any moment, and a duration of ten days or more is extremely rare. Even after this, however, life may not be despaired of, as Minningham [33] reports a clinical case of total anuria of twenty-three days in which the patient lived and resumed renal function after nephrotomy.

Shukert Building.

31. Hench, P. S., and Aldrich, Martha: Salivary Index to Renal Function, J. A. M. A. **81**: 1997 (Dec. 15) 1923

32. Scarpini, V.: Il saugere nell anuria istericu: considerazione sul l'uria e sui leucociti eosinofili, Atti d. r. Accad. d. fisiocrit in Siena **16**: 179-185, 1904.

33. Minningham, W. D.: A Case of Total Anuria of Twenty-Three Days Followed by a Perfect Recovery, J. M. Sc. New Jersey, 1908, pp. 566-568.

CARBON MONOXIDE POISONING

GRADUAL, CUMULATIVE EFFECTS IN YOUNG CHILDREN, WITH REPORT OF A FATAL CASE *

A. M. STEVENS, M.D.
NEW YORK

Cold weather and the dark days of winter mean for our city population an increasing use of illuminating gas for warmth and light. Frequently, gas heaters and flexible gas tubing are bought at second hand without regard to leaks or imperfections. Such heat as the house affords is precious: the windows, which may have been kept open in early fall, are closed the greater part of the time night and day.

This is the situation that makes for a seasonal increase in the risk of carbon monoxide poisoning, acute and chronic, for persons of all ages, aside from the year-round liability of adults whose occupations have to do with furnaces, coal mining, gas manufacture or garage exhaust. At any time in the year an ordinary gas jet for illumination may be found to be leaking: in winter, with closed windows, it may easily become a menace to life.

In city houses there is a certain hazard in the incomplete combustion of coal in stoves, but the chief danger lies in the escape of illuminating gas. This, in the form of "water gas," contains about 30 per cent of carbon monoxide. When breathed even in small quantities in the presence of oxygen, carbon monoxide will combine with the hemoglobin of the blood corpuscles to form a relatively stable compound. This is due to the greater affinity of carbon monoxide for hemoglobin, which is considered to be from 220 [1] to 250 [2] times as great as oxygen.

* From the Department of Diseases of Children, Columbia University, and the Children's Medical Division, Bellevue Hospital.

1. Nicloux, M.: L'instabilité de l'hemoglobine oxycarbonée, Presse méd. **25**: 153 (March 15) 1917.

2. Henderson, Yandell: Carbon Monoxide Poisoning, J. A. M. A. **67**: 580 (Aug. 19) 1916.

Exposure to large amounts of the gas results in rapid displacement of oxyhemoglobin, which is easily dissociated, and a saturation of the blood with carbon monoxide. By the failure of oxygenation of the body cells there ensues a tissue asphyxia, especially of the brain, which results in unconsciousness and finally in death.

If a victim of gas poisoning is brought into the open air while yet alive, the carbon monoxide hemoglobin is only very slowly dissociated: for several hours blood cells of a characteristic cherry red may circulate uselessly with their load of carbon monoxide. Inhalations of oxygen with 5 per cent carbon dioxide will assist the dissociation.[3] Some have believed that besides the asphyxia there may be a direct toxic action of carbon monoxide on the body.[4] This view is disproved by the experimental work of Haldane.[5] It is probable that illuminating gas owes part of its toxicity to other constituents;[3] this added factor is a more powerful respiratory stimulus than pure carbon monoxide.

The acute cases of gas poisoning are dramatic and obvious. More difficult of detection is the gradual and insidious type of poisoning, which results from the continuous or repeated exposure to a small quantity of carbon monoxide. A certain amount of the hemoglobin is fixed by the gas inhaled and, before this is dissociated, a further exposure raises the level of carbon monoxide hemoglobin in the blood. According to Gettler,[6] adults may accumulate up to 5 per cent of carbon monoxide in the blood without symptoms. Glaister[7] remarks: "It must not be forgotten that carbon monoxide poisoning, owing to its cumulative action, may occur even in the open air." Henderson and Haggard[8] have summed up the cumulative effect of breathing small amounts of gas over a period of time:

> When the time is measured in hours and the concentration of carbon monoxide is expressed in parts per 10,000 of air, the physiologic effects may be defined by the equations:
>
> Time × concentration = 3, no perceptible effect.
> Time × concentration = 6, just perceptible effect.
> Time × concentrati = 9, headache and nausea.
> Time × concentration = 15, dangerous.
>
> The meaning of this rule is that . . . breathing of air containing one part of carbon monoxide for four hours by a person sitting at rest and breathing quietly produces essentially the same effect as breathing air containing four parts for one hour.

It is important that this should be clearly understood because of an unfortunate paragraph in Peterson, Haines and Webster's Legal Medicine and Toxicology,[9] in which it is stated that "carbon monoxide is not a cumulative poison, but when inhaled in very small quantities it disappears from the blood. In cases of chronic gas poisoning the blood does not serve for diagnosis." The first sentence calls for revision. The second is no longer valid, since estimation of carbon monoxide by the method of Van Slyke[10] gives accurate values down to 1 per cent, while symptoms of chronic poisoning are probably not encountered until the concentration of carbon monoxide is above 5 per cent of the blood.

In adults the symptoms of gradual or chronic gas poisoning are, first of all, fatigue and muscular weakness; then headache, dulness, mental depression, poor memory, restricted fields of vision, ashy pallor, palpitation and irregularity of the heart; and, finally, nausea, vomiting, vertigo, slowing of the pulse, dyspnea, dilatation of the veins of the neck, polycythemia, and increasing torpor.[11]

It is interesting to note how many of these symptoms are subjective; that is, one must depend on the patient's story rather than on what is found on physical examination. The objective signs are suggestive only in the late phases when the amount of carbon monoxide in the blood is so great as to approach the stage of acute poisoning.

With children, the problem of gradual gas poisoning is more serious, and the younger the child the greater the danger and the more difficult it is to make a diagnosis. Older children, of school age, from whom a history of subjective symptoms might be obtained by careful questioning, are probably saved from the cumulative effect of escaping gas in an ill ventilated house by the very fact of their attendance at school and their hours of play in the streets. Younger children, and especially infants, have a peculiar susceptibility to the poisonous effects of carbon monoxide. This susceptibility varies directly with the respiratory exchange and the metabolic rate, and inversely as the weight of the body.[12] Boehm[13] says: "It is quite certain that children succumb rapidly to the action of the poison." According to Lancereaux,[14] "of those poisoned by carbon monoxide, those who have most need of oxygen, that is to say, the young, succumb most quickly or are most easily affected."

Subjective symptoms are out of the question in children under 4 years of age, and without a definite history of gas exposure the clinician has, as yet, no recognized symptom complex to lead him to a diagnosis in cases of gradual gas poisoning.

The following case seemed to be of sufficient interest to report in detail:

REPORT OF CASE

A. M., a boy, aged 7 weeks, was brought to the outpatient department of Bellevue Hospital, Oct. 22, 1925, with a complaint of vomiting.

The family history was negative. There had been four previous pregnancies, the children all living and well. This baby had been born in normal labor at term, and weighed 9 pounds (4 Kg.) at birth: it had been bottle fed from the first. There had always been a tendency to vomit, with failure to gain; the baby had been wakeful and cried bitterly. When he was about 6 weeks old, the mother noticed that the child cried very little and during the following week seemed dull, slept a great deal, took only a part of the feedings, and vomited after each bottle. Two days before admission, the baby seemed cold to the touch and all feedings were forcibly vomited. The bowels were constipated, but the stools were of the usual yellow when obtained by enema.

This history seemed to suggest pyloric stenosis.

When examined, the baby did not appear, at first glance, to be in a serious condition. There was no unconsciousness:

3. Henderson, Yandell; and Haggard, H. W.: The Elimination of Carbon Monoxide from the Blood After a Dangerous Degree of Asphyxiation, and a Therapy for Accelerating the Elimination, J. Pharmacol. & Exper. Therap. **16**: 11 (Aug.) 1920.
4. McCombs, R. S.: Clinical Manifestations of Illuminating Gas Poisoning, Am. J. M. Sc. **144**: 577 (Oct.) 1912.
5. Haldane, J.: The Action of Carbonic Oxide on Man, J. Physiol. **18**: 430, 1895.
6. Gettler, A. O.: Quoted by Norris, C.: Carbon Monoxide Poisoning, Indust. Hyg. Bull. New Work, August, 1925.
7. Glaister, J., and Logan, D. D.: Gas Poisoning in Mining and Other Industries, New York, William Wood & Co., 1914, p. 311.
8. Henderson, Yandell; and Haggard, H. W.: Health Hazard from Automobile Exhaust Gas in City Streets, Garages and Repair Shops, J. A. M. A. **81**: 385 (Aug. 4) 1923.
9. Peterson, Haines and Webster: Legal Medicine and Toxicology, New York, W. B. Saunders Company, Ed. 2, **2**: 309, 1923.
10. Van Slyke, D. D., and Salvesen, H. A.: The Determination of Carbon Monoxide in Blood, J. Biol. Chem. **40**: 103 (Nov.) 1919.
11. Haldane (footnote 5). Wilmer, W. H.: Effects of Carbon Monoxide on the Eye, Am. J. Ophth. **4**: 73 (Feb.) 1921.
12. Henderson (footnote 2). Haldane (footnote 5).
13. Boehm, R., in Ziemssen's Cyclopedia of Medicine, New York, William Wood & Co. **17**: 464, 1878.
14. Lancereaux, M. E.: L'empoisonnement oxycarboné par les poêles mobiles, Bull. Acad. de méd., Paris **21**: 161 (Feb.) 1889.

the limbs and head were moved about, and the pupils, in middilatation, reacted, though slowly, to light. At intervals the baby gave a short, rather feeble cry. There was obvious undernourishment, with a weight of only 6 pounds 3 ounces (2.7 Kg.); but the uniform pink flush of body and limbs gave a false impression of health. If anything, the hands and feet and lips were more brightly pink than the rest of the body.

On palpation, it was shocking to find the baby's flesh as cold as a corpse. External warmth was applied at once and the temperature taken. Not one of three clinical thermometers would register in the rectum as high as 94. In all, the mercury hung at least a quarter of an inch below that mark. A hot coffee enema was given, and the rest of the examination was carried out with the baby lying on warm water bags and blankets.

The skin was inelastic and showed dehydration. The respirations were irregular, slow and shallow. The breath was without odor. The pulse was not palpable at the wrist. The heart was slow and irregular, varying between 80 and 48 per minute. The spleen was not palpable. The reflexes were all very sluggish. There were no paralyses.

In cases of such extreme circulatory failure, one would expect to find a general pallor, with cyanosis of the hands and feet. The extraordinary bright pink flush led to the tentative diagnosis of carbon monoxide poisoning, and the mother was carefully questioned as to possible exposure. She denied any knowledge of escaping gas in the house: no gas heater had been in use; she was sure the family would have smelled gas if there had been a leak.

Meanwhile, Dr. Lester Rosenberg had done the rapid qualitative test for carbon monoxide. Three drops of blood from the baby's heel were allowed to drop into 5 cc. of water and shaken to a uniform pink solution. Three drops of control blood from his own finger were shaken with the same amount of water in a second test tube: to the contents of both tubes a drop of 5 per cent sodium hydroxide solution was added. The solution of blood from the baby remained a clear pink, while the control solution turned a dirty green. This showed the presence of carbon monoxide in the baby's blood of at least 10 per cent. Blood was then drawn for the quantitative test by the method of Van Slyke, as modified by Parker and O'Brien. Dr. A. O. Gettler reported a concentration of 18 per cent carbon monoxide.

The baby lived forty-four hours in the hospital, with a temperature always below 96 in spite of external heat. The pulse did not rise above 80 and was always irregular. The respirations became very slow and shallow down to 6 per minute.

Hypodermoclysis was given of 200 cc. of 5 per cent glucose, and repeated with 125 cc. of the same solution.

Oxygen was administered without apparent effect. Transfusion was attempted, but by the time a donor was obtained the baby was too far gone. During the first twelve hours about half of the milk mixture was taken and vomiting occurred only twice.

Examination of the blood revealed: hemoglobin, 80 per cent; red blood cells, 4,360,000; leukocytes, 18,000; polymorphonuclears, 88 per cent; lymphocytes, 10 per cent, and large mononuclears, 2 per cent.

The coagulation time was normal, and the bleeding time somewhat retarded.

The urine showed no acetone and was normal, except for a faint trace of albumin.

After death blood was again drawn for a quantitative test, and 8.5 per cent carbon monoxide was found.

A necropsy was done by Dr. B. M. Vance of the chief medical examiner's office, and an unobstructed pylorus was found. The only positive findings were fine reddish hemorrhagic spots throughout the lungs, and a congested condition of the spleen, liver and kidneys. Microscopic sections of the lung showed the small pathologic areas to be simply groups of alveoli filled with red blood cells; there was no surrounding inflammation. Sections of the brain, basal ganglions and medulla showed no pathologic change. Death was pronounced as due to carbon monoxide poisoning.

A visit of inspection to the house revealed a leak of illuminating gas from a central fixture in the front room of the flat. It was in this room that the baby's crib was placed at night. The apartment was of only three rooms, in which lived a family of seven, the mother and father and four children of 7, 6, 5, and 1½ years, respectively, besides the baby that had succumbed. There were only two outside windows, both in the front room: these were open "most of the time." The cook-stove, burning anthracite and in use only for preparing the meals, was in the middle room. Opening out of this was a dark room in which the baby had been kept in the day: a small window opening on the hall of the tenement had been kept open "part of the time."

The mother protested that the baby, for the past month, had been taken out nearly every day for two hours at least. The father, who was away all day, the older children, who were out of the apartment most of the time, and the 18 months old child, who played on the roof, all seemed well and gave no history of suggestive symptoms. The mother, who had been with the baby constantly, had suffered for the past five months from headache, always worse on waking in the morning. These headaches stopped after the gas had been shut off.

This is the sum of all the evidence obtainable, and it is only fair to say that the complete good faith of the mother is not to be questioned.

In the light of these facts is it possible to reconstruct the case with a fair degree of probability? It is not known how long the gas had been escaping into the apartment, but the amount at any one time must have been so small that no one noticed the odor. Accordingly, we must assume a gradual cumulative absorption of carbon monoxide, perhaps since birth. Before the concentration in the blood became at all high, we find the symptoms of vomiting, failure to gain, restlessness and constant crying. The last week of torpor, lost appetite, and forcible vomiting, with the final few days of lowered bodily temperature, slowed pulse and respiration, will represent the phase in which the carbon monoxide in the blood had accumulated to such a point as to impair the processes of oxidation in the body and to cripple the circulatory mechanism.

Lancereaux [14] quotes Cadet de Gassicourt as reporting a similar case, but with no reference to vomiting as a symptom. The infant, 29 days old, fell ill, refused to nurse, and slept constantly with eyes half closed. The pulse was feeble, respiration was slowed, and the temperature was normal or somewhat low, so that the baby was in almost a lifeless condition. All the symptoms were due to inhalation of small quantities of carbon monoxide from a badly burning stove. This patient recovered.

To illustrate symptoms in older children from repeated exposure to carbon monoxide, Koren [15] gives an account of three sisters, aged 4, 8 and 12 years, poisoned by carbon monoxide from a slow combustion stove. The air of the room was found to contain 0.4 per cent of carbon monoxide. The symptoms were slight jaundice with attacks of vomiting, general pallor of the skin, headache, breathlessness and dilatation of the veins of the neck. There were hemic murmurs of the heart, with enlargement of the spleen. The number of red blood cells and the hemoglobin percentages were much diminished. Albumin was present in the urine. The 8 year old girl died on the ninth day. At necropsy, marked cardiac dilatation was found, with advanced degeneration of the cardiac muscle. The other two children made a rapid and complete recovery.

15. Koren, A.: Tre Tilfaelde af akut forløbende perniciøs Anaemi inden samme Husstand, Norsk. Mag. f. Lægevidensk. **6**: 570, 1891.

Wilmer[11] reports a very interesting case of the effects of gradual poisoning by carbon monoxide on a family including several children, one as young as 4 years. Symptoms noted were listlessness, progressive pallor, loss of appetite, fatigue, night terrors, auditory disturbances and contraction of the visual fields.

It is reasonable to suppose that cases like these are not exceptional; that in every large city a certain number of gradual poisonings by carbon monoxide occur, but that very few are recognized as such. Since the danger is especially grave for infants, the mothers should be specifically warned in the use of gas appliances, and more than ordinary emphasis should be placed on the necessity of fresh air outings and ventilation in the home.

In the milder grades of gradual gas poisoning, the diagnosis will not be easy. When an infant is seen with torpor, subnormal temperature and a history of vomiting and failure to gain, it is only fair to question the mother as to the use of gas in the home and the amount of fresh air the baby has been getting. Certainly in such cases the simple and rapid qualitative test for carbon monoxide in the blood should be done before the usual diagnosis of malnutrition with gastroenteritis is allowed to stand.

The advanced cases are more easily recognized; in these the heart is slowed, the body temperature is very low, and the characteristic pink flush of the skin and mucous membranes serves as an index of the degree of saturation of the blood with carbon monoxide.

SUMMARY

1. There is a seasonal increase, in the winter, of the hazard of gas poisoning, acute and chronic.
2. There is a cumulative poisonous effect of repeated or continuous exposure to small amounts of carbon monoxide.
3. Young children and infants are peculiarly susceptible to gradual carbon monoxide poisoning.
4. In serious cases of gradual gas poisoning, there will probably be more than 10 per cent of carbon monoxide in the blood.
5. There is a simple and rapid qualitative test for carbon monoxide in the blood, which will show the presence of 10 per cent or more.
6. Clinicians should be on the alert to recognize cases of gradual poisoning by carbon monoxide, especially in infants.

55 East Seventy-Sixth Street.

Progression of Greek Education.—As regards the exercises which the Greeks after centuries of experience adopted in their system of physical training, we know most about those which were used at the great games. Probably the oldest of all is running, perhaps because the warrior required efficiency in this respect both for attack and for defense; the Greeks practiced endurance in a long race and making a short distance in the quickest possible time. Later came jumping, discus throwing, spear throwing and wrestling. These five exercises together made up the famous pentathlon, which was the most important event in the Olympic games. Those who could be victorious in all these five exercises must have attained very all round physical development. Running and jumping brought the legs into use, discus and spear throwing the arms, while wrestling gave strength to the torso. We learn from Aristotle that those who took part in the pentathlon were the most beautiful of human beings, and that their bodies were equally well developed as regards strength, ease and quickness.—Knudsen: A Textbook of Gymnastics, p. 2.

A SYSTEM FOR AN INTENSIVE POLLEN SURVEY

WITH A REPORT OF RESULTS IN CHICAGO*

KARL K. KOESSLER, M.D.
AND
O. C. DURHAM
CHICAGO

The necessity of reliable local botanic data in solving the hay-fever problem has been frequently emphasized, and a number of field surveys have been made in which the common weeds that produce wind-borne pollen

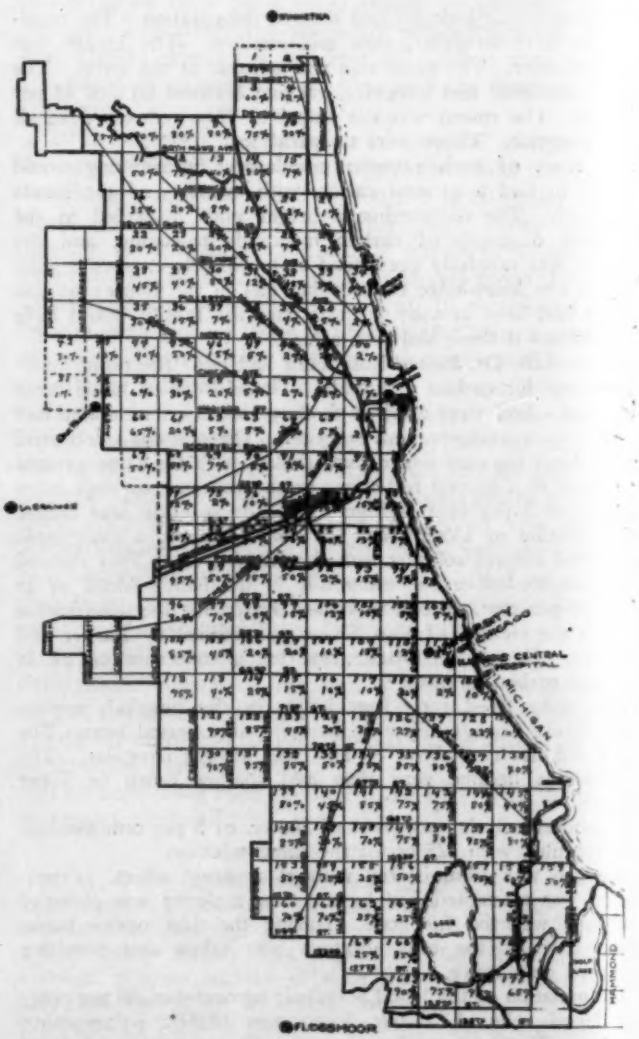


Fig. 1.—Map used in field survey: The numbers on the squares correspond to those on cards in the index; plate stations are shown by the large dots. Each block is a mile square. Numbers correspond to those on cards in index where the pollen-producing plants are listed. Percentages indicate amount of area given to free vegetation.

were observed and listed. At least one observer (Scheppegrell) has reported careful studies of atmospheric pollen over long periods. While field observation gives exact information as to the seasonal and geographic factors, it does not yield very satisfactory quantitative data. Exposing oil-coated plates to catch the air-borne pollens and making differential counts of them at regular intervals is a method that gives very valuable quantitative results, but it should be supported

* From the Otho S. A. Sprague Memorial Institute and the Department of Pathology, University of Chicago.

by careful field work. By using a combination of these two methods, we have been able to secure a large amount of satisfactory data on the distribution and abundance of the flora in Chicago; the time, duration and intensity of pollen production, and the relative importance of the offending plants.

METHODS

With the aid of a competent botanist in the field continuously from the first of June until the last of September, 1925, we were able to carry on a combined field and air survey of Chicago. The field work consisted in a city-wide examination of the hay-fever producing flora. For this purpose, the city was divided into 171 mile-square blocks (fig. 1), each of which was carefully inspected at least once during the season. A card index record (fig. 2) was made of each square, showing the percentage of its area given to free vegetation, the character of the area, and a list of all the important plants ranking in the order of their abundance in the square. Specimens of all plants studied were collected while in bloom and preserved as a permanent herbarium.

For the air study, stations were established in various parts of the city where oil-coated microscopic slides were exposed, from which, as far as weather conditions would permit, differential pollen counts were made daily. Corn oil or cottonseed oil was found to be better than glycerin for this purpose, because of the fact that they do not absorb moisture and thus distort the pollen grains. Stains were not found necessary in preparing the slides for counting. Distinctions between pollens of the various groups and species were based largely on the shape and surface markings. There is such variation in a single pure specimen that except where there is considerable normal difference between species, size was found not to be a safe point of distinction. Except in the case of corn, it was not found practical to distinguish between the various grasses. Short and giant ragweed pollens could not be differentiated, their average size (about 15 microns) and general appearance being very nearly the same. Hop and hemp could not be differentiated. The docks and plantains, though not related botanically, were also counted together.

Square No.77 Date of survey 7-8-25
22d-31st Sts. Free vegetation 40%
Western-Ashland Aves. Industrial-Residence

Species	
1.Burweed Marsh Elder	11.Quack Grass
2.Cocklebur	12.Bluegrass
3.Pigweed	13.Western Ragweed
4.Giant Ragweed	14.Hemp
5.Short Ragweed	15.Yellow Dock
6.Sunflower	16.Red Sorrel
7.Tumbling Mustard	17.Cat-tail
8.Redtop	18.Timothy
9.Lamb's Quarter	
10.Sweet Clover	

Fig. 2.—Specimen card from index: This index is intended to be used for reference in conjunction with the map (fig. 1) in the study of particular cases of pollen disease.

FIELD STUDIES [1]

Chicago has no extreme differences of topography or soil; consequently, we find a striking similarity in the flora of all parts of the city. There is a little marsh land, near Lake Calumet, and almost no woodland. The suburban districts are either unbroken prairie or gardens. On account of numerous railways, widely scattered factory districts and the many detatched residential developments, there are large areas of neglected land comparatively near the center of the city. Only a few of our 171 squares are so closely built as to exclude vacant lots. Dense growths of ragweeds, sometimes 6 feet high, follow the banks of canals and rivers along most of their entire length. Within two and a half miles of the "Loop" can be found extensive weed patches. Even if weed cutting laws were enforced they would accomplish little, for most noxious weeds will make a second or even a third growth and will bloom almost in spite of anything. While grasses predominate in the undisturbed soil of the suburban districts, and the vacant lots closer in are more weedy, yet we found that the variety and amount of pollen were practically the same on a given day at the top of the Tribune Tower as they were near the ground in the Oak Park district. Thus, the plates confirmed the field observations as to evenness of distribution of species.

Fig. 3.—Weed area in Chicago: average of the waste area in the 171 squares into which the city was divided in making the survey.

The total of all neglected land in Chicago amounts to 38 per cent of the city's area (fig. 3). Thus, each year there are at least 40,000 acres within the city limits producing nature's own selection of weeds. An idea of what this means is gained by computing the amount of pollen an acre of ragweed will yield. An average city lot (about one-tenth acre) of ragweeds will produce a minimum of 100 ounces of pollen in a season. This is about 60 pounds per acre. Actual production is often many times this figure. This means that hundreds of tons of ragweed pollen alone are liberated each season in Chicago.

Table 1 is a list by groups of the plants studied. Trees were not included in the survey, as their pollinating season was past when the work was started. It is important to be familiar with these botanic groups and in the study of specificity of pollen reactions to remember a plant's family ties. All close relatives of offending species were closely watched. The botanic names are included in this list for reference, as the common name used for any plant in this article is at best a local one and likely to be only one of a dozen by which it is known throughout the country.

PRODUCTION FACTORS

To appreciate best the data embodied in the graphs and charts of totals and averages to be presented in the latter part of this paper, it should be noted that the three outstanding factors determining a plant's importance are length of season of bloom, abundance of plants and intensity of pollen production. As weather has less immediate effect on production of pollen than its distribution, its influence had best be considered in interpreting the totals.

1. The field work and microscopic identification of plants was carried out under our direction by Mr. James H. Palmer and Mr. E. H. Runyon.

TABLE 1.—*Plants Studied*

Common Name	Botanic Name
Grasses	**Gramineae**
Timothy	Phleum pratense
Orchard grass	Dactylis glomerata
Corn	Zea mays
Bluegrass	Poa pratensis
Redtop	Agrostis palustris
Wild rye	Elymus spp.
Annual bluegrass	Poa annua
Wire-grass	Poa compressa
Quack grass	Agropyron repens
Ray grass	Lolium perenne
Fescue	Festuca spp.
Panic grass	Panicum spp.
Marsh grass	Spartina cynosuroides
Ragweeds	**Ambrosiaceae**
Short ragweed*	Ambrosia elatior
Giant ragweed	Ambrosia trifida
Western ragweed	Ambrosia psilostachya
Burweed marsh elder	Iva xanthifolia
Cocklebur	Xanthium commune
Chenopods	**Chenopodiaceae**
Lamb's quarter	Chenopodium album
Oak-leaved goosefoot	Chenopodium glaucum
Maple-leaved goosefoot	Chenopodium hybridum
Russian Thistle	Salsola kali
Orache	Atriplex patula
Amaranths	**Amaranthaceae**
Pigweed	Amaranthus retroflexus
Western water hemp	Acnida tamariscina
Wormwoods	**Artemisia**
Mugwort	Artemisia caudata
Biennial sage	Artemisia biennis
Prairie sage	Artemisia ludoviciana
Composites	**Compositae**
Sunflower	Helianthus annuus
Tickseed sunflower	Bidens spp.
Goldenrod	Solidago spp.
Docks	**Rumex**
Yellow dock	Rumex crispus
Red sorrel	Rumex acetosella
Plantains	**Plantago**
Plantain	Plantago major
English plantain	Plantago lanceolata
Miscellaneous	
Hemp	Cannabis sativa
Japanese hop	Humulus japonica
Sweet clover	Melilotus alba
Tumbling mustard	Sisymbrium altissimum
Cat-tail	Typha spp.

The simplest of the foregoing factors is the time and length of the blooming season (table 2). Some species will bloom for an average of eight weeks, with the apex of pollen production near the middle of that time. The time of really effective production is as short as two days for some species and as long as a month for others. Annual bluegrass, sweet clover and lamb's quarter have unusually long seasons, while those of the wormwoods (mugwort, annual sage and biennial sage) are very short. Docks and plantains are the only weeds blooming during the grass season. The chenopods and amaranths bridge the gap between the spring and fall pollen seasons. While the dates given here will vary somewhat from year to year, the variation, particularly in late summer and fall, will not exceed two or three days. A study of the calendar alone might suggest that there are times when there are as many as twenty species of pollen in the air at once, but plate counts show that less than half that many are of consequence at any time.

TABLE 2.—*Field Pollen Calendar, Showing Date and Length of Season of Bloom for Each Species**

	May	June	July	Aug.	Sept.
Annual bluegrass	− −	+ + + +	+ + + +	− − − −	− − −
Red sorrel	− −	+ + + +	+ + + +	− −	
Yellow dock	−	+ + + +	− − − −	−	
Bluegrass	−	+ + + −			
Orchard grass	−	+ + + +	− − − −		
English plantain		− + + +	+ + − −	− − −	
Wire grass		− + + +	+ − − −		
Ray grass		− − −	− − − −	− − −	
Sweet clover		− − −	+ + + +	− − − −	− − − −
Tumbling mustard		− − +	+ + + −	−	
Cat-tail		− −			
Wild rye		− −	− − − −	− −	
Plantain		+ +	+ + − −		
Timothy		− +	+ − − −		
Quack grass		− −	+ + + −	−	
Fescue		−	+ + + −	−	
Redtop		−	+ + + −		
Lamb's quarter		−	− + + +	+ + + −	− − − −
Hemp			− + + +	+ + + +	− −
Pigweed			− − + +	+ + + +	− − − −
Russian thistle			− − − −	− − − −	− − − −
Sunflower			− − − −	− + + +	+ − − −
Western water hemp			− − + +	+ + + −	− − − −
Oak-leaved goosefoot			− − −	− − − −	− −
Maple-leaved goosefoot			− −	− − −	
Short ragweed			− −	+ + + +	+ − − −
Giant ragweed			− −	+ + + +	+ − − −
Orache			−	− + + +	− − − −
Western ragweed			−	− − − −	− −
Japanese hop			−	+ + + +	+ + − −
Goldenrod			−	− − + +	+ − − −
Panic grass			−	− − − −	− − − −
Marsh grass				− − − −	− −
Burweed marsh elder				− + +	+ −
Mugwort				− −	
Cocklebur				− +	+ −
Biennial sage					− −
Prairie sage					−

* In the table, each sign, minus or plus, represents one week. The portion of the line denoted by ++++ represents the season of maximum observed pollination.

The relative abundance of plants in the field, as shown in table 3, was determined by the order of the appearance of the species in the card index. We find that the ragweeds, including marsh elder and cocklebur, equal in quantity all other free vegetation in the city. Grasses are about half as abundant. The next group in order is the amaranth, followed by the composites and chenopods. The rank of each species is as valuable as that of the groups. These figures are not subject to much variation on account of weather or season.

TABLE 3.—*Relative Abundance of Hay-Fever Plants*

	Scale of 100
Short ragweed	100
Giant ragweed	68
Sweet clover	45*
Burweed marsh elder	43
Cocklebur	43
Pigweed	34
Wire-grass	31
Quack grass	30
Redtop	30
Sunflower	24
Bluegrass	24
Lamb's quarter	12
Panic grass	9
Tumbling mustard	6
Annual bluegrass	6
Orchard grass	3
Timothy	2
Orache	2
Western water hemp	1
All others less than	1
By Groups	
Ragweeds	100
Grasses	50
Amaranths	12
Composites	10
Chenopods	6

* The rôle played by sweet clover as a hay-fever plant is very problematic, but it seemed best to include it at this time in the table.

The important factor in intensity of production of pollen of each species is quite difficult to reduce to figures. Table 4 is the result of ten years of observation and experience in collecting pollen in quantities and is, of course, only approximate. This factor varies with the weather more than either of the other two. Giant ragweed is easily the heaviest pollen producer encountered in Chicago, though the highest plate count for any single species during the survey was for burweed marsh elder. Lamb's quarter yields heavily only under very favorable conditions, usually late in the fall. During the summer, it does not rank nearly as high as here given. Water hemp would enter more into the totals if it had a wider distribution. While it is the most common weed in one square (no. 92), it is not found at all in most parts of the city, being the extreme example in Chicago of a locally abundant plant. Mugwort could easily be a cause of trouble if it were more abundant.

TABLE 4.—*Relative Ability to Produce Pollen (Scale of 100)*

	Maximum Intensity
Giant ragweed	200
Orchard grass	180
Burweed marsh elder	150
Western water hemp	140
Short ragweed	100
Lamb's quarter	100
Hemp	100
Japanese hop	100
Bluegrass	95
Timothy	90
Mugwort	80
Cocklebur	30
Redtop	35
Pigweed	20
English plantain	40
Sunflower	10
Quack grass	10
Sweet clover	3
Goldenrod	8

Orchard grass leads the grasses in pollen producing ability if not in acreage. The few examples given above illustrate the complexity of the pollen problem, when considered from any angle except that of the air analysis.

EVALUATION OF SPECIES

With the foregoing more or less artificial data in mind to help in interpreting our findings, it is profitable to study the actual performance of the same species and groups as shown by the air survey. The plate counts for all stations have been averaged for each day and condensed into one table (table 5). From this table several graphs have been drawn, one of the most interesting of which is the total graph (fig. 4). Two thirds of the pollen found on the slides was from the ragweeds, one fifth from the grasses; and of the remainder, the chenopods were the largest contributors.

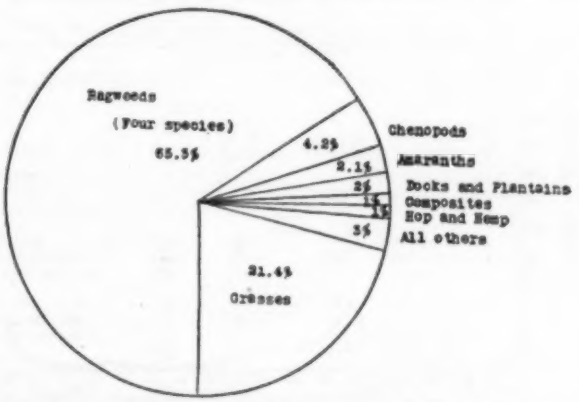


Fig. 4.—Total pollen found on plates calculated from the totals of all pollen plates exposed at the regular stations during the season June, July, August and September; special plates are not included.

The most important of the dozen species of grasses studied is bluegrass. Its wide distribution and intensive production of pollen easily put it in the lead. Redtop and orchard grass command about equal attention. The former sends up blooms to about the height of

TABLE 5.—*Average Plate Counts*

	Grasses	Dock and Plantain	Chenopods	Cat-Tail	Amaranths	Hop and Hemp	Sweet Clover	Mustard	Short and Giant Ragweeds	Burweed Marsh Elder	Cocklebur	Goldenrod	Sunflower	Wormwood	Tickseed Sunflower	Corn	Others	Total	Wind Direction	Wind Velocity	Precipitation in Inches
June 4	87	4	..	..	..	..	..	..	....	..	..	..	..	..	..	..	..	91	SW.	13.6	....
5	83	10	..	..	..	..	..	..	....	..	..	..	..	..	..	..	..	93	SW.	9.9	....
6	116	4	..	..	..	..	..	..	....	..	..	..	..	..	..	..	..	122	E.	7.2	....
9	131	9	..	..	..	..	..	..	....	..	..	..	..	..	..	..	..	140	SW.	20.7	....
10	229	11	..	..	..	..	..	..	....	..	..	..	..	..	..	..	..	240	NE.	14.8	....
11	44	3	..	..	..	..	..	..	....	..	..	..	..	..	..	..	..	47	SE.	14.3	0.01
18	41	9	..	3	..	..	..	..	....	..	..	..	..	..	..	..	..	53	SW.	12	1.76
19	19	4	..	..	..	..	..	..	....	..	..	..	..	..	..	..	..	23	SW.	9.5	....
20	33	7	2	..	..	..	..	..	....	..	..	..	..	..	..	..	..	42	NE.	9.8	....
24	30	7	1	2	..	..	..	..	....	..	..	..	..	..	..	..	..	40	N.	14	1.8
30	20	4	..	..	..	..	..	..	....	..	..	..	..	..	..	..	..	24	NE.	8	....
July 1	12	3	1	1	..	..	..	..	....	..	..	..	..	..	..	..	..	18	SW.	12.5	....
2	21	5	1	..	..	..	..	..	....	..	..	..	..	..	..	..	..	28	NE.	10.2	....
3	18	6	1	2	..	..	..	..	....	..	..	..	..	..	..	..	..	27	E.	8.9	0.19
7	23	12	1	..	1	..	..	..	....	..	..	..	..	..	..	..	..	36	NE.	9.5	....
8	17	4	1	..	1	..	..	..	....	..	..	..	..	..	..	1	..	24	NE.	8	....
10	47	6	5	..	2	3	1	1	....	..	..	..	..	..	..	..	..	65	NE.	8.5	....
11	23	4	3	..	1	1	..	..	....	..	..	..	..	..	..	1	..	34	SW.	10	0.32
16	20	..	8	..	5	2	3	..	7	..	..	..	..	..	..	..	3	48	NW.	13.4	0.01
22	15	..	4	..	4	2	1	1	7	..	..	..	..	..	..	..	3	37	NW.	9.2	....
23	11	..	4	..	4	1	..	..	8	..	..	..	..	..	..	..	2	30	SE.	6.8	....
24	16	..	5	..	3	3	..	..	5	..	..	..	..	..	..	..	2	36	S.	9.7	+
August 11	3	..	2	..	3	2	..	..	19	..	..	..	..	..	..	..	1	30	NE.	8.5	+
15	1	..	2	..	2	2	1	..	21	..	..	..	..	..	..	..	2	34	NE.	5.8	....
16	1	..	6	..	3	4	1	1	27	..	..	..	..	..	..	..	1	47	SE.	6.7	....
17	2	..	3	..	4	5	..	..	68	..	..	..	..	..	..	2	..	84	S.	6.8	+
19	1	..	4	..	3	3	..	..	58	8	1	..	..	1	..	1	..	75	NE.	6.3	+
20	2	..	2	..	1	2	..	..	50	15	1	..	..	..	..	1	..	74	NW.	9.3	0.06
21	2	..	5	..	4	..	1	..	152	14	..	..	..	1	..	..	2	181	NE.	11.5	....
22	3	..	9	..	3	..	..	..	122	..	..	3	..	..	..	..	9	149	S.	7.3	....
25	4	..	14	..	10	2	..	..	221	..	3	3	1	1	..	..	2	261	SW.	6.2	....
26	4	..	5	..	5	2	..	..	353	18	8	..	1	..	..	..	..	396	NE.	16.2	....
28	1	..	5	..	2	..	..	..	339	49	2	..	..	..	..	..	5	363	SE.	9.3	....
31	16	..	8	..	..	..	..	8	500	..	..	20	..	..	..	..	..	552	NE.	7.8	....
September 1	11	..	24	..	1	4	10	..	396	19	9	..	..	..	..	..	..	474	NE.	6.2	....
7	3	..	16	..	..	..	..	..	157	4	1	..	..	..	..	..	..	181	NE.	5.5	....
8	10	..	..	..	..	..	..	..	105	..	4	..	..	..	..	..	..	119	S.	9.7	0.96
9	9	..	30	..	3	8	..	..	208	..	4	..	..	..	1	..	3	306	SW.	11.8	0.15
16	2	..	5	..	..	1	..	..	34	..	..	..	..	..	1	..	1	44	NE.	5.9	....
17	13	..	..	..	..	3	..	..	73	..	..	..	..	4	1	..	..	111	S.	14	....
18	5	..	..	..	..	..	..	..	40	..	..	..	..	..	5	..	..	62	NE.	11.8	0.01
19	32	..	20	..	..	..	..	..	44	..	..	..	..	..	4	..	48	148	SW.	11.6	0.24
20	12	..	..	..	..	..	..	..	36	..	..	..	..	..	..	..	..	48	SW.	16.2	+
21	12	..	4	..	4	..	..	..	25	..	..	..	..	..	..	..	..	45	NE.	13.1	....
22	4	..	4	..	..	..	..	..	14	..	..	..	..	..	..	..	1	23	E.	8.2	0.01
23	4	..	9	..	..	..	..	..	10	..	..	..	1	1	..	..	2	27	SW.	9.2	....
24	4	..	6	..	..	..	..	..	18	..	..	2	..	..	..	..	..	30	NE.	14.8	....
25	6	..	6	..	..	..	..	..	36	..	..	..	..	..	..	..	4	52	E.	12.9	....
28	4	..	..	..	..	..	..	..	16	..	..	..	..	..	..	..	..	20	NE.	7.4	....
29	8	..	..	..	..	..	..	..	29	..	..	..	..	..	..	..	3	40	E.	10.9	....

those of bluegrass, but it is finer in appearance, while the latter is much coarser and larger. Bluegrass and orchard grass seasons are almost parallel, and they are probably responsible for 80 per cent of the pollen causing the apex of the grass curve (fig. 5). The smaller wave in July is largely due to redtop, but if timothy were more plentiful it would add materially to this

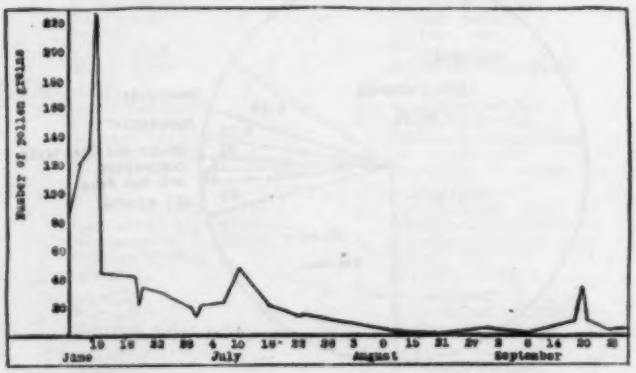


Fig. 5.—Grass pollen season from average plate counts.

wave. Quack grass is in bloom at this time also. The weather interfered considerably with results during the latter part of the grass season. Corn pollen seldom reached the plates and never got as high as the Tribune Tower. Annual bluegrass, often found in lawns, will bloom when only a few inches high and at any time during the growing season, but does not yield heavily enough to be of much importance. Wild rye is a summer grass with a small yield of pollen. The small fall grass peak was due to panic grass.

Of the five ragweeds found in Chicago, short ragweed and giant ragweed are of about equal importance. The plants of the latter species are not quite so abundant as the former, but are much more productive. These two weeds are largely responsible for the fall pollen season (fig. 6). Burweed marsh elder is similar to giant ragweed in size and shape, with leaves resembling sunflower or cocklebur. It derives its name from the latter resemblance. It has a wide distribution and a short season of intensive bloom, preceding that of the other ragweeds a few days. Cocklebur is widely distributed and will thrive where no other weeds can, but it has a low pollen output.

Table 6.—*Specimen of Special Plate Count* *

August 21. Plate exposed at Sheridan Road and Diversey Boulevard for 24 hours. South of Burweed Marsh Elder and Giant Ragweed, 20-300 feet south of Mugwort. In line with the wind.

	Pollens
Short and giant ragweed	273
Mugwort	296
Burweed marsh elder	487
Chenopods	9
Amaranths	6
Grasses	4
Goldenrod	1

* The plate clearly illustrates the proportion of pollens from the ragweeds and all other plants in the early fall. Only one pollen of the goldenrod was found.

Lamb's quarter furnishes almost all the pollen from the chenopod group, and pigweed is equally important in the amaranth group. Both should be regarded as of local importance. Plantains and docks are of only local importance. They are common lawn and pasture weeds and should be remembered during the grass season. Japanese hop and hemp, though unlike in appearance, are closely related botanically. The former is a vine that is sometimes cultivated, but when it escapes into waste places it will almost cover all other vegetation. Hemp is as large as giant ragweed. Both hop and hemp produce much pollen but are not very abundant.

A number of special plates were exposed for the study of particular species. The results of one of these exposures is shown in table 6. It makes unanswerable argument as to productive ability. As the few mugwort patches are in the northern part of the city, only a very few grains of the pollen ever reached the regular plates, but this plate shows that it could easily cause trouble. It should be noted what burweed marsh elder can do. Sweet clover is probably the most conspicuous plant in the city and has been suspected of causing hay-fever. Considerable time was spent studying it. Strong winds will dislodge its pollen, and it is possible that it may occasionally annoy some one who is brought into close contact with it. Tumbling mustard is also a showy summer weed, but its pollen is blown with much difficulty. Sunflowers and other composites are abundant, but special plating failed to catch their pollens in any quantity. Their pollens may be valuable in treatment of pollen disease caused by their ragweed relatives, but with reasonable care they need never be a causative factor.

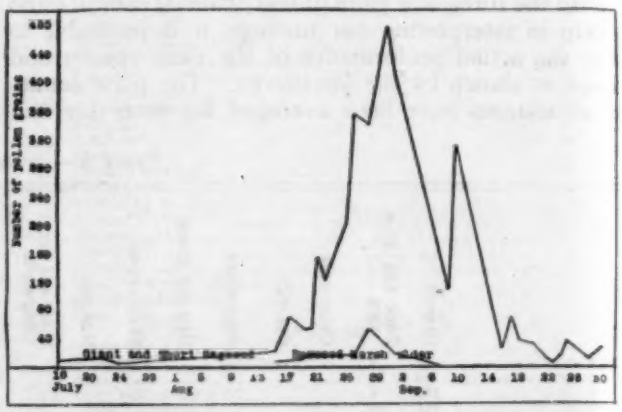


Fig. 6.—Ragweed pollen season from average plate counts.

POLLEN SEASONS AND WEATHER

The two pollen seasons as shown in figure 7 are not much more than a combination of the grass and ragweed curves (figs. 5 and 6). Their relative volume is interesting, that of the spring season being about one fifth of that of the fall season. Wind and rain and the immediate presence of Lake Michigan make noticeable variations in this total curve. Almost every fluctuation is easily traced to one of these causes. During June, the prevailing winds were from the West, bringing grass pollen from the suburban districts and the country. But while the winds were favorable to distribution, at no time during the month were there more than four consecutive days without rain. It will be noted that the peak of the grass season was reached on the day after a strong southwest wind had filled the air with pollen. A rainy period in the middle of the month accounts for the sudden drop in the plate counts. The government weather bureau reports the normal number of days of sunshine, clouds and rain for June. During July, August and September, the prevailing winds were mostly from the East and Northeast. However,

these lake winds were never as strong as from other directions, and a fairly uniform amount of pollen was found on all slides. As there was no great difference between slides within a few rods of the lake and those miles away during a period of lake winds, it must be assumed that upper air currents carried the pollen out over the lake, and surface winds brought it back.

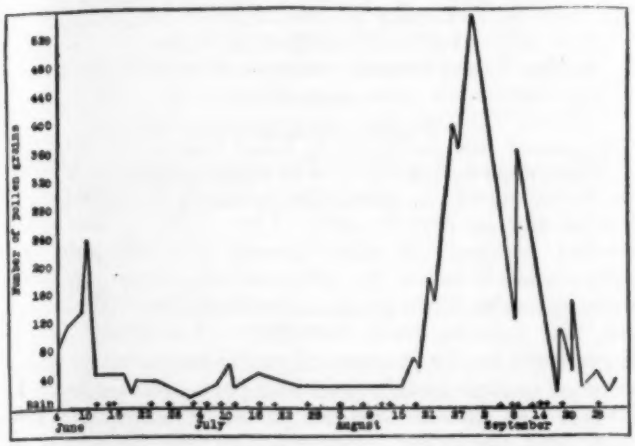


Fig. 7.—Results of total plate counts of pollen of all species.

The fall season began, August 15. With almost no rain from this time until the second week of September, the air became loaded. The two abrupt drops in the curve during early September were due to rains. The records for September 9 and 19 show what a strong Southwest wind can do in stirring up pollen. It is to be regretted that unfavorable weather conditions artificially terminated both pollen waves.

Clinical Notes, Suggestions, and New Instruments

EFFECTS OF INSULIN AND GLUCOSE ON ACID-BASE BALANCE IN SURGICAL DIABETIC PATIENTS *

R. B. GIBSON, PH.D., IOWA CITY

The importance of the preoperative preparation of diabetic patients by building up a glycogen reserve and by administering insulin or insulin and glucose has been repeatedly emphasized.[1] In this clinic it is routine to give our patients 40 Gm. of glucose by mouth or hypodermoclysis and from 5 to 20 units of insulin, according to the severity of the diabetes, from one to two hours before major operations. When insulin and glucose are administered to diabetic patients in this way, there is a distinct shifting of the acid-base balance of the blood plasma to a greater alkalinity, and this change is still evident in the critical postoperative period.

Some determinations of the plasma p_H (Cullen) and of the carbon dioxide (Van Slyke) in diabetic patients are given in the accompanying table. These were all insulin cases. Blood samples were taken before insulin and glucose were administered, just previous to operation, and again from one to two hours after the patients were returned to the ward. In the control tests, essentially the same relations obtained. Patients were operated on under ethylene-ether anesthesia. Postoperative urine specimens were free from acetone and diacetic acid. The action of insulin and glucose so administered is to induce a persisting and only partially compensated alkalosis (Van Slyke). While antiketogenic combustion or "mass action"[2] of the glucose may be considered to some extent responsible, it is probable that a combination of phosphoric acid into a carbohydrate complex[3] frees the strong bases of the tissue and blood phosphates. A new factor influencing acid-base balance is suggested. The insulin "shock" following massive doses of insulin and glucose described by Foshay[4] may well be an alkalosis syndrome.

The Acid-Base Balance After Insulin and Glucose Administration *

Case	Plasma p_H	Plasma Carbon Dioxide	Blood Sugar	Comment
1. Fasting.....	....	....	...	No breakfast
Preoperative ...	7.50	73	198	Amputation, thigh
Postoperative...	7.46	69	118	
2. Fasting.....	7.38	50.4	88	No breakfast
Preoperative....	7.40	60.7	245	Cholecystectomy
Postoperative...	7.36	54	332	Glucose by rectal drip
3. Fasting.....	7.43	58	243	No breakfast
Preoperative....	7.51	64	311	
No operation....	7.49	60.7	165	Control test
Shock.....	7.43	57	44	Additional insulin; threshold symptoms
4. Fasting.....	7.45	59.5	83	No breakfast
Preoperative....	7.58	63.3	130	
No operation....	7.53	61.7	104	Control test
	7.50	59.5	128	Breakfast, usual insulin
Preoperative....	7.55	68	228	Amputation, below knee
Postoperative...	7.52	59.5	137	

* All the patients received insulin 20 and glucose 40 except patient 3, who was given insulin 25 and glucose 50.

Austin and Cullen,[5] reviewing some earlier observations, note that the concentration of alkali carbonate and especially the p_H, tend to become abnormally high in diabetic patients treated with an excess of insulin. That the effect is further intensified by insulin and glucose administration in controlled cases and persists even over a period of anesthesia and operative procedure is indicated from our figures. The change is independent of any hypoglycemic state.

GALLSTONES IN CHILDREN

J. D. CAREY, M.D., FORT COLLINS, COLO.

F. B., a girl, American, aged 9 years and 3 months, weighing 65 pounds (29 Kg.), who was referred by another physician for operation for appendicitis, always had been well except for the usual diseases of childhood, until two years previously. Since then, she had had attacks of abdominal pain of such character and severity that she was compelled to be absent from school on an average of four days each month. The pain was located in the right side, associated with vomiting, slight fever and a small degree of rigidity. Attacks would come on suddenly and confine her to bed for a period lasting from two to four days. There was no jaundice or clay colored stools; the bowels were regular, and no digestive disturbance occurred between attacks. The appendix was removed and showed signs of slight chronic inflammation, though not sufficient, in my opinion, to cause the amount of trouble that the girl was having. The pelvis was normal on examination; the gallbladder was greatly distended and an oval stone 1 inch (2.5 cm.) in diameter, was lodged in the common duct. The gallbladder was removed and the wound closed. The recovery was uninterrupted.

* From the Laboratory of Clinical Chemistry, Department of Internal Medicine, State University of Iowa College of Medicine.

1. Wilder, R. M., and Adams, S. F.: Present Status of the Diabetic Patient as a Surgical Risk, Wisconsin M. J. **22**: 557 (May) 1924. Barborka, C. J.: Insulin in Surgical Complications of Diabetes Mellitus, M. Clin. N. America **7**: 25 (July) 1923. Joslin, E. P.: Treatment of Diabetes Mellitus, 1924, p. 615. Pemberton, H. S., and Cunningham, L.: The Use of Insulin in Operations on the Diabetic, Lancet **2**: 647 (Sept. 27) 1924.

2. Wirzuchowski, M.: Disappearance of Ketone Bodies in Presence of Unoxidized Sugar in Completely Phlorhizinized Dogs, Proc. Soc. Exper. Biol. & Med. **22**: 425 (May) 1925.

3. Harrop, G. A., and Benedict, E. M.: The Participation of Inorganic Substances in Carbohydrate Metabolism, J. Biol. Chem. **59**: 683 (April) 1924.

4. Foshay, L.: Observations upon the Action of Insulin on the Blood, with Special Reference to the Cause of the Condition Known as Hypoglycemia, Am. J. Physiol. **73**: 470 (July) 1925.

5. Austin, J. H., and Cullen, G. E.: Hydrogen Ion Concentration of the Blood in Health and Disease, Medicine **4**: 275 (Aug.) 1925.

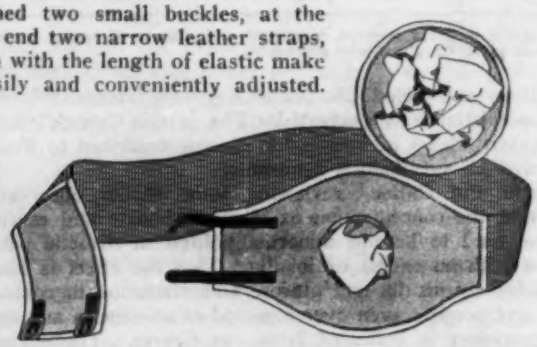
I find that cholelithiasis in childhood is a rare event, and that there have been very few cases reported. Paterson and Wyllie[1] of London reported, in 1925, a case similar to this in which the appendix was removed without relief, and at a later date the gallbladder was examined and five or six small stones were found. Still collected from the literature reports of twenty-four cases in children under the aged of 14; however, in ten of these the condition was of congenital origin, the calculi being discovered in infants who had died within the first few months of life. While this condition is very rare, I believe that every child, irrespective of age, who has an abdominal operation, is entitled to an examination of the gallbladder.

A NEW COLOSTOMY BELT

JOHN W. NEELY, M.D., TERRELL, TEXAS

The great boon that colostomy has been to a certain type of colon surgery has, from the esthetic standpoint, always been more or less neutralized by the burden and detriment to the patient's peace of mind, because of the proper care that it necessitates on his part. Therefore, any appliance more convenient, cleanly and comfortable than those now in use is worthy of description.

A patient of mine who has a colostomy has recently designed such a belt. It consists of two parts; the first is the belt, which is made of two pieces of canvas joined by an elastic band. At one end of the belt are attached two small buckles, at the other end two narrow leather straps, which with the length of elastic make it easily and conveniently adjusted.



New colostomy belt.

In the larger piece of canvas there is inserted a metal ring about 4 inches (10 cm.) in diameter. This ring is intended to fit round the two ends of the intestine forming the colostomy, as shown in the illustration. The other part is the colostomy cap, which fits the ring.

To apply the belt, the cap is inserted into the ring and covered with from six to twelve strips of ordinary toilet paper, long enough to reach across the cap. The paper is then pushed into the recess of the cap with the fist and placed over the colostomy. When it is necessary to change, the patient simply grasps the paper by its ends and throws it into the toilet. Advantages of this belt are:

1. It is easy to change, as everything is caught in the toilet paper and thrown away. There is no cleaning, washing or disinfecting.

2. It is convenient, as only toilet paper is used, and nothing has to be carried around for emergency.

3. It is soundless, as the paper muffles sound. The loudest escaping gas may be instantly stopped by a slight pressure on the outside of the clothing.

4. It is odorless, as the paper and cloth check odor in ordinary conditions of the bowels; in extreme conditions, any reliable deodorant can be sprayed on the cap and paper before the belt is applied.

5. It is comfortable to wear; there are no metal parts or bag to cramp or interfere with the freedom of the body.

6. It is not bulky; it permits the clothing to lie naturally, and ordinarily is entirely unnoticeable.

Label Building.

1. Paterson, Donald; and Wyllie, W. G.: Abdominal Pain Due to Gallstones, in Child Aged Nine Years, Am. J. Dis. Child. 29: 516 (April) 1925.

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

BERNARD FANTUS, M.D.
Associate Clinical Professor of Medicine, Rush Medical College
CHICAGO

(Continued from page 1131)

Effervescent Powders: These are composed of the medicinal agent in admixture with an alkaline bicarbonate and an organic acid. They form a very convenient method of administering various salts in effervescing solution, the effervescence rendering them more agreeable to the palate, more acceptable to the stomach, and favoring their absorption. The effervescence is produced by the presence of nearly molecular proportions of sodium bicarbonate, 83.5 parts, and citric acid, 70 parts, or tartaric acid, 75 parts; or both acids, the citric acid procuring better granules, the tartaric acid being less expensive. When this mixture is thrown into water, the vegetable acid liberates carbon dioxide, which causes the effervescence; a slight excess of acid is generally permitted to give a pleasant acidulous taste. To this effervescing mixture the medicament is added in such proportion that the dose of the powder may be a teaspoonful (about 4 Gm.), a dessertspoonful (about 8 Gm.), or a tablespoonful (about 16 Gm.). The powders are mixed dry. If desired in granular form, they are then granulated by heating them between 93 and 104 C., until the mass coheres sufficiently to form small granular lumps after being rubbed through a coarse sieve. However, the ungranulated powder is just as efficient and useful in every way as the granular powder, and it can be dispensed extemporaneously by the pharmacist.

Effervescent Salts of N. F.

	Average Dose	Containing of Active Ingredient	Dose in 180 Cc. of Water
Effervescent artificial Carlsbad salt, N. F.			4 Gm.
Effervescent artificial Kissingen salt, N. F.			4 Gm.
Effervescent artificial Vichy salt, N. F.			4 Gm.
In addition to these, it has formulas for:			
Effervescent lithium citrate	8 Gm.	0.4 Gm.	
Effervescent magnesium sulphate	16 Gm.	8.0 Gm.	
Compound effervescent potassium bromide	6 Gm.	0.50 potassium bromide 0.25 lithium carbonate 0.05 caffeine	

These powders should be kept and dispensed in tightly stoppered bottles, as the moisture of the atmosphere causes a slow reaction to take place between the ingredients, with consequent impairment or even loss of effervescence. When wanted, the dose is put in half a tumblerful of water and taken during effervescence.

Almost any salt or mixture of salts that is nondeliquescent may be prescribed in effervescing form.

* This is the sixteenth of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

The Pharmacopeia recognizes the effervescing sodium phosphate, the average dose of which is 4 Gm. It is deservedly one of the most popular laxative salines.

The National Formulary contains a number of useful formulas for effervescent salts that enable us to produce artificial mineral waters resembling the natural mineral waters in the essential ingredients.

The writing of extemporaneous prescriptions for effervescent salts is facilitated by remembering that it takes 18 parts of tartaric acid (or 17 parts of citric acid) to neutralize 20 parts of sodium bicarbonate. If, therefore, we desire to prescribe a mixture of sodium salicylate, 1 Gm., and potassium bromide, 2 Gm.,[39] in effervescing form for the relief of migraine, and assuming that a heaped teaspoonful of the finished product might weigh about 5 Gm., we would write:

℞ Sodium salicylate ..... 20 Gm.
Potassium bromide ..... 40 Gm.
Sodium bicarbonate ..... 20 Gm.
Tartaric acid ..... 18 Gm.
Dispense in bottle.
Sig. Heaped teaspoonful in tumberful of water every hour, as required, for attack of migraine.

Because it is more portable as well as more permanent and the dosage is more accurate, the dispensing of this prescription in two separate powders like the seidlitz powders, might be preferable. It would then be written:

℞ Sodium salicylate ..... 10 Gm.
Potassium bromide ..... 20 Gm.
Sodium bicarbonate ..... 10 Gm.
Mix and divide into ten blue powder papers.
Tartaric acid ..... 9 Gm.
Divide into ten white powder papers.

In the treatment of acute articular rheumatism, the most efficient remedy is sodium salicylate in 1 Gm. doses for a man (0.6 Gm. for a woman). This is usually guarded by sodium bicarbonate (at least 1 Gm.) against precipitation by the hydrochloric acid of the stomach, and by indirect alkali such as sodium citrate[40] (1 Gm.) because some of the phenomena of salicylism are believed to be due to acidosis. To secure the promptest possible systemic action with the least unpleasant effect on the stomach, this mixture is best administered in a tumblerful of effervescing water. Where "seltzer water" is not readily available, it is well to add to each dose the effervescing mixture of 1 Gm. of sodium bicarbonate and 0.9 Gm. of tartaric acid, and to prescribe the acid powder to be dispensed separately in a white powder paper. The remainder of the powder is dispensed in a blue powder paper; and one of each of the powders is mixed in a tumbler three-fourths full of water. The dose is taken every hour until one of three things happens: the pain is relieved, the ears sing, or the patient sweats excessively. Then the dose is given every two hours for several days, then every three hours, and finally every four hours, so as to continue the remedy for at least two weeks after all pain and fever have disappeared. During all this time it is essential that the patient be at absolute rest in bed, even to the extent of using bed pan and urinal. Otherwise, relapses are almost bound to occur.

Teas (species).—These are mixtures of very coarsely comminuted vegetable drugs intended for the domestic preparation of infusions or decoctions. They are a relic of bygone days, when the service of skilled pharmacists was not generally available. Nowadays they are practically never prescribed by physicians, though they are occasionally called for by the laity. To supply this demand, the National Formulary contains formulas for laxative species (St. Germain tea) and pectoral species (breast tea). A teaspoonful of either of these is added to a cup of boiling water, permitted to steep for about ten minutes, strained, and taken while still warm. People should, of course, never be trusted with such unreliable and irresponsible preparations of potent remedies.

39. Sodium bromide is less desirable for this purpose, as it absorbs moisture from the air.
40. Potassium citrate is deliquescent.

TABLETS

Tablets are medicated powders formed into disks of convenient size, without the use of a cohesive. When a cohesive is used, the result is spoken of as a lozenge. Tablets that are slow in disintegration are essentially pills. Tablets are most commonly made by compression in a machine (compressed tablets). They may also be prepared by mixing the powder with a volatile liquid so as to form a mass, which is then molded into disk shape by means of a suitable apparatus, and exposed to the air dry. The result is a tablet triturate.

By whatever process these disks are made, they may be considered acceptable if they meet the following requirements: When placed in water they should disintegrate within a few minutes, and with the aid of not more than gentle agitation. When dry, they should be crushable into powder without difficulty by the pressure of a thumb. Still, they should possess sufficient firmness so as not to crumble and wear away at the edges when subjected to ordinary handling.

Compressed tablets usually differ from tablet triturates not only in containing pure medicaments without diluents, and in being made by compression machines, but also in shape, having oval instead of flat faces. Substances in the form of granules or small crystals can readily be compressed into tablets without preliminary manipulation. Fine powders must be formed into granules before they can be satisfactorily fed to the tablet-making machine. This accounts for the mottled appearance of many compressed tablets containing mixtures.

A matter of the greatest possible importance is the rate of disintegration of the tablet. Unless the tablet is to be used as a lozenge or intended to act as a pill, speedy disintegration must be secured. Improperly compressed tablets containing insoluble substances have been known to pass through the entire alimentary tract and to appear undissolved in the stool. Hence compressed tablets containing slowly soluble or insoluble bodies, such as quinine sulphate or charcoal, must be made so as to disintegrate rapidly, which can be done by the admixture of either starch, which swells in water and thus disintegrates the tablet, or of sodium bicarbonate and citric or tartaric acid, which by their effervescence produce disintegration. Such tablets must be kept carefully protected against moisture; otherwise, the "disintegrating" agent will become ineffective. Resinous substances should not be prescribed without liberal admixture of a soluble diluent, as otherwise they may not disintegrate. The addition of a slight trace of liquid petrolatum is also useful in preventing the drug from packing too firmly together.

The "tablet triturate" possesses certain advantages over compressed tablets; indeed, over other solid dosage forms. Well made tablet triturates disintegrate immediately on being placed in water; thus, they have the same degree of solubility as powders, over which they have the advantage of being swallowed more readily and conveniently. They are more soluble than capsules, pills and compressed tablets. They are prepared by triturating the medicament with sucrose, lactose or other inert soluble substances, and then moistening the powder

with sufficient alcohol to make a paste. This is pressed into molds consisting of a plate perforated with holes of the desired size of the tablet. The tablets thus shaped are pressed out of the holes by means of another plate having pegs that accurately fit the perforations. When the alcohol evaporates, which requires only a few minutes, the tablets retain their shape and are ready for use.

Tablet triturates are generally made to weigh about 0.05 Gm. each; hence they are suitable for the administration only of medicines the dose of which is small, such as calomel, morphine sulphate, aconitine, and arsenic trioxide. The "hypodermic" tablets so useful for the preparations of solutions for injection are prepared in this manner.

The tablet saturate might also be referred to here, though it is rarely used nowadays. It is a sugar tablet, originally made without medication (so-called blank tablet), which is medicated by the addition of a drop of alcoholic solution. The alcohol is then allowed to evaporate. Obviously, aqueous or weakly alcoholic fluids cannot be used for this purpose.

Substances that are unsuitable for prescribing in powder form are also not fit for tablet administration. Suitable for this purpose are those powders whose dose is small; at any rate, not much larger than 0.3 Gm., the usual size of compressed tablets. If the dose is much smaller, it is converted into a trituration by being mixed with sugar of milk, sugar or other diluent powder, and formed into a tablet triturate. For large doses, several tablets may be taken at one time. Tablets as large as 1 Gm. are made; but these are intended for solution before use.

Tablets have become, within the few years of their existence—they were introduced by Dr. Robert M. Fuller in 1878—one of the most popular of administration forms. This is because, by means of suitable machinery, they can be manufactured very cheaply on a large scale; and manufacturers have done their best to introduce them, most especially among physicians who dispense their own medicines. To retail pharmacists, on the other hand, tablets have not been very welcome, partly because they are somewhat more troublesome to prepare on a small scale than powders, capsules or pills, but chiefly because they require a special machine. This is rather unfortunate, because for certain purposes extemporaneously made tablets are unexcelled. It is also a rather erroneous attitude on the part of the druggist, because small, inexpensive tablet machines operated by hand are on the market, and the technic is certainly not beyond the powers of comprehension and skill of a well trained pharmacist. However, as the situation stands at present, physicians should not prescribe other than ready-made tablets, such as they know the pharmacist carries in stock, unless they are so fortunate as to have available the services of a pharmacist sufficiently interested and ambitious to equip himself to prepare tablets extemporaneously. Even then it will be more convenient and less expensive for the pharmacist to have all those tablets that are used very extensively manufactured by power driven machines.

Tablets are sometimes swallowed as a whole. Then they have no advantage over pills or capsules other than the manufacturer's convenience. They may be dissolved before use, as is done with hypodermic tablets and with those intended for topical employment, as, with the official poison tablets of corrosive mercuric chloride. These weigh 1 Gm., and contain 0.5 Gm. of corrosive mercuric chloride, with sodium chloride or ammonium chloride forming the remainder. They are colored blue, made of angular shape, preferably coffin-shaped, not discoid, and directed to have the words "poison" and the skull and cross bones design distinctly stamped on them. Another example of tablet for topical use is "Seiler's tablets," which, dissolved in a wineglassful of water, yield an alkaline lotion suitable for nose or throat.

A special use for tablets in which they are unexcelled is for "candy medication," an administration form especially suitable for children. The idea of presenting medicine in candy form is as old as are confections and lozenges. These have not become generally popular, because what is sometimes called palatable is not always really delicious. To be successful, candy medication [41] must meet the following requirements: It must be a perfectly delicious sweet, attractive in form, color and odor, and free from the suspicion of disagreeable or medicinal taste or odor. It must disintegrate rapidly in the mouth, for a sick child will usually not suck candy as a healthy youngster would. These requirements are met by sugar tablets, medicated with tasteless or nearly tasteless and yet active substances. Modern synthetic chemistry has enriched our resources in this respect to a surprising degree.

The new National Formulary will contain formulas for the following sweet tablets, which may be prescribed by merely giving the official name: tablets of mild mercurous chloride, each containing 0.006 Gm. of mild mercurous chloride; tablets of phenolphthalein, containing 0.06 Gm. of phenolphthalein; tablets of santonin, containing 0.03 Gm. of santonin, and compound tablets of santonin, containing 0.03 Gm. of santonin and 0.03 Gm. of mild mercurous chloride.

Quite a number of other substances can be given in the same form. Were a general formula for a base for sweet tablets desired, it might be found in the formula for vanilla cacao sugar.

Vanilla Cacao Sugar

Tincture of vanilla	5 Cc.
Cacao powder	10 Gm.
Dextrose*	10 Gm.
Sucrose, powdered	80 Gm.

Mix thoroughly by tituration in a mortar, and preserve in a well stoppered bottle.

* The dextrose seems to be of advantage in the shaping of the tablet by the machine, but is not absolutely necessary.

Mixing this sugar preparation with the proper amount of medicament in such proportion that it is contained in 0.3 Gm. yields a powder that is ready for compression in the tablet machine. This forms a fairly satisfactory vehicle for children's doses of saccharated ferrous carbonate, arsenic trioxide, phenetsal (salophen), atropine sulphate, methenamine (hexamethylenamine U. S. P. IX), calcium iodobehenate (sajodin), terpin hydrate, albumin tannate, and a number of others.

For substances that have a slight flavor of their own, such as thyroid, sulphur or podophyllum, cinnamon cacao sugar is better. The latter may be prepared by substituting 0.5 cc. of a 10 per cent spirit of cinnamon for the tincture of vanilla in the formula for cacao sugar. A number of almost insoluble substances of slight but lingering taste (quinine ethyl carbonate, acetphenetidin, digitalis, ipecac) can be made perfectly pleasant by impregnating them with gluside (saccharin) by trituration with a 2 per cent alcoholic solution of

41. Fantus, Bernard: Candy Medication, J. A. M. A. **66**: 26 (Jan. 1) 1916; St. Louis, C. V. Mosby Company, 1915.

gluside containing also 2 per cent of tolu,[42] and permitting the alcohol subsequently to evaporate.[43]

The prescribing of ready-made tablets is very simple. We write:

℞ 15 tablets of mild mercurous chloride (N. F.).. 0.006 Gm.
Label: One every hour until six, five, four are taken on three successive days.

When extemporaneous tablets are desired and a pharmacist is available who is equipped to make them, it is customary to designate the quantity of medicament wanted in the total number of tablets and the total quantity of diluent to be used to make up tablets of the desired weight (0.18 or 0.30 Gm.) and to order the pharmacist to divide this powder into the required number of tablets. Thus, should we desire to prescribe sweet tablets of arsenic trioxide and ferrous carbonate, we might write:

℞ Arsenic trioxide ..... 0.03 Gm.
Saccharated ferrous carbonate..... 2.00 Gm.
Cacao (10 per cent) sugar, vanilla flavored.. 8.00 Gm.
Divide into thirty tablets.
Label: One three times a day after meals.

Besides the sweet tablets mentioned, the National Formulary will contain a formula for tablets of sodium bicarbonate (0.25 Gm. each, flavored with oil of peppermint), the "soda-mint" tablets, so popular with certain dyspeptic patients. There is also a formula for charcoal tablets, each of which contains 0.3 Gm. of animal charcoal, any required number of which one would rather swallow than to drink a suspension of the powder in water. The same might perhaps be said of the tablets of sulphur and potassium bitartrate, which contain only 0.2 Gm. of washed sulphur and 0.06 Gm. of potassium bitartrate, so that quite a number of them will have to be taken to constitute a medicinal dose.

Confections.—Confections, also known as electuaries, are soft, pasty solids composed of medicinal agents, sugar and flavoring matter intended to be eaten, or dissolved in the mouth, like candy. They were never very popular, and are now used even less frequently than formerly, having been displaced by their dosage form, the lozenges. Confections are dispensed in jars or in wide mouthed bottles. Small lumps of a size approximating some familiar object, or spoonfuls are directed to be taken at a time. Inexactness of dosage is one of their disadvantages, and they do not keep well.

Only two confections are official in the National Formulary: the confection of rose and the confection of senna. The former might be considered a basic confection to be suitably medicated. The latter, a laxative that might be given in 4 Gm. doses even to a child, is not much used or generally kept in drug stores, probably because a more pleasant confection can be prepared at home by mixing equal parts of senna leaves, figs, seedless raisins, and prunes and dates, freed from stones. These are chopped and mixed in a chopping bowl, and rolled into cylinders as thick as a thumb, to be cut into slices of a size appropriate to the size and age of the patient.

A domestic recourse, not sufficiently resorted to in pediatric practice, is to prescribe the medicine—which must be relatively inoffensive—in powder form, and to have it made into a confection at home by admixture of any desired marmalade or sweet preserve.

(To be continued)

42. Fantus, Bernard: Tolu and Sugar Coating in the Disguising of Medicines, J. Am. Pharm. A. **7**: 249 (March) 1918.
43. Detailed working formulas for these have been published in the Journal of the American Pharmaceutical Association (**10**: 533 [July] 1921).

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

TYPHOID VACCINE (See New and Nonofficial Remedies, 1925, p. 360).

The Cutter Laboratory, Berkeley, Calif.

Typhoid-Paratyphoid Prophylactic.—Marketed in packages of three vials, one vial containing 500 million killed typhoid bacilli, 375 million killed paratyphoid A bacilli and 375 million killed paratyphoid B bacilli per cubic centimeter, and two vials each containing 1 billion killed typhoid bacilli, 750 million killed paratyphoid A bacilli and 750 million killed paratyphoid B bacilli per cubic centimeter; in packages of one 20 cc. vial containing 1 billion killed typhoid bacilli, 750 million killed paratyphoid A bacilli and 750 million killed paratyphoid B bacilli per cubic centimeter; and in packages of one syringe containing 1 billion killed typhoid bacilli, 750 million killed paratyphoid A bacilli and 750 million killed paratyphoid B bacilli per cubic centimeter.

COD LIVER OIL.—Oleum Morrhuae.—For description see the U. S. Pharmacopeia and Useful Drugs.

Parke, Davis & Company's Standardized Cod Liver Oil.—It has a content of fat soluble vitamin-A which is not less than 440 units per gram, and an antirachitic potency of not less than 59 units per gram.

Dosage.—Infants, from 1 to 2 cc. (15 to 30 minims); older children, from 2 to 4 cc. (30 to 60 minims); adults, 4 cc. (1 fluidrachm) or more, three times a day.

Manufactured by Parke, Davis & Co., Detroit. No. U. S. patent or trademark.

Parke, Davis & Company's standardized cod liver oil complies with the standards of the U. S. Pharmacopeia. In addition, it is required to have a content of fat soluble vitamin A, determined by the method of the U. S. P., equivalent to 440 units (one unit being the amount required to correct both the induced xerophthalmia and retarded growth of young albino rats) and an antirachitic potency when determined by the method of McCollum, Simmonds, Shipley and Park (*J. Biol. Chem.* **51**: 41 [March] 1922) of not less than 59 units (one unit being the amount of cod liver oil required daily to initiate recalcification in the leg bones of young albino rats).

PITUITARY SOLUTION, U. S. P. X OBSTETRICAL-WILSON.—An extract of the posterior lobe of the pituitary body of cattle, preserved by the addition of chlorbutanol, each cubic centimeter containing 0.005 Gm. It is standardized by the method of the U. S. Pharmacopeia to have the strength of Solution of Pituitary, U. S. P.

Actions, Uses and Dosage.—See Pituitary Gland, New and Nonofficial Remedies, 1925, p. 260.

Manufactured by The Wilson Laboratories, Chicago. No U. S. patent or trademark.

Ampoules Pituitary Solution, U. S. P. X Obstetrical-Wilson, 0.5 cc.
Ampoules Pituitary Solution, U. S. P. X Obstetrical-Wilson, 1 cc.

SCARLET FEVER IMMUNITY TEST (See THE JOURNAL, Jan. 16, 1926, p. 199).

Lederle Antitoxin Laboratories, New York.

Scarlet Fever Streptococcus Toxin for the Dick Test-Lederle.—Prepared by growing the scarlet fever streptococcus in broth, using culture Dick I or Dick II obtained from the Hygienic Laboratory or culture no. 55-4 obtained from the New York City Department of Health. Marketed in packages of one vial containing toxin, which has been diluted with physiological solution of sodium chloride and preserved with 0.25 per cent of phenol, sufficient for ten tests; in packages of one vial containing 0.1 cc. of a concentrated toxin solution containing 66.6 per cent glycerol, sufficient for 100 tests, and a vial of 10 cc. of physiological solution of sodium chloride containing 0.25 per cent phenol for diluting the toxin, so that 0.1 cc. of the dilution will give a typical Dick reaction.

Scarlet Fever Streptococcus Toxin-Lederle.—Prepared by growing the scarlet fever streptococcus in broth, using culture Dick I or Dick II obtained from the Hygienic Laboratory or culture no. 55-4 obtained from the New York City Department of Health. Marketed in packages of four vials of toxin diluted with physiological solution of sodium chloride containing 0.25 per cent phenol and containing, respectively, 500, 1,000, 2,500 and 5,000 skin test doses; in packages of four 20 cc. vials of toxin diluted with physiological solution of sodium chloride containing 0.25 per cent phenol and containing, respectively, 500, 1,000, 2,500 and 5,000 skin test doses per cubic centimeter; in packages of forty vials of toxin diluted with physiological solution of sodium chloride containing 0.25 per cent phenol, ten containing 500 skin test doses, ten containing 1,000 skin test doses, ten containing 2,500 skin test doses, and ten containing 5,000 skin test doses.

DEXTROSE (See THE JOURNAL, Dec. 12, 1925, p. 1891). The following dosage form has been accepted:

Ampules Dextrose 50%, 50 cc.—Each ampule contains 50 cc. of a 50 per cent solution of dextrose, U. S. P.
Prepared by Swan-Myers Company, Indianapolis.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 NORTH DEARBORN STREET - - - CHICAGO, ILL.

Cable Address - - - - "Medic, Chicago"

Subscription price - - - - - - Five dollars per annum in advance

Please send in promptly notice of change of address, giving both old and new; always state whether the change is temporary or permanent. Such notice should mention all journals received from this office. Important information regarding contributions will be found on second advertising page following reading matter.

SATURDAY, APRIL 17, 1926

THE PATHOLOGY OF SCURVY

General knowledge of the pathology of scurvy dates back to Lind's classic Treatise on the Scurvy, published in 1772. Hess [1] has designated Barlow's publication in 1883, establishing the identity of the scurvy of adults and of infants, as the modern milestone in the study of the disorder, so that "Barlow's disease" is no longer looked on as a distinct entity. The theories of its etiology have been varied. For many years the potassium deficiency theory, suggested by Garrod, gained wide acceptance. That scurvy should be attributed to a lack of this element is, as Hess remarks, readily comprehensible in view of the abundance of potassium in the antiscorbutic foodstuffs, the fruits and the vegetables. The citric acid theory had "a short but popular career," as did the hypothesis including acidosis as the etiologic factor. Not a few persons have held to a theory of toxic injury, believing that poisons responsible for the appearance of scurvy are either consumed in the food or formed in the bowel by bacterial agencies. Toxins of alleged microbic origin have formed a favorite theme, almost since the birth of modern bacteriology, for exploitation in relation to the genesis of disorders of obscure origin; there has often been a sort of contest for favor in the eyes of students between the postulate of a specific detrimental bacterium and the mysterious pathogenic toxin. The hypothesis that scurvy is an expression of severe constipation had a short-lived existence, because the known facts will not square with it. Today there is all but universal acceptance of the interpretation of scurvy as an avitaminosis—an expression of the lack of the labile vitamin C in the diet. The vitamin hypothesis has been tested experimentally on various species, beginning with the investigations of Holst and Froelich in 1912. As a result, it has become possible to reproduce the symptoms, to test remedial agents, and to examine in detail the defects when they arise in the organism as well as the reparative changes induced by antiscorbutic treatment.

In the study of the histopathology of scurvy, lesions of the bones were early identified and established as characteristic. Hess has pointed out that attention was focused so exclusively on the bones that for many years, indeed until recently, the other organs of the body were neglected. This is true of the gross as well as of the microscopic anatomy. Consequently, more than usual interest centers in the detailed investigations of Wolbach and Howe [2] of Boston on the morphologic concomitants of the condition of complete scorbutus and the immediate responses in repair. In the introductory contribution to the newly launched *Archives of Pathology and Laboratory Medicine*, published by the American Medical Association, Wolbach and Howe characterize scurvy as inability of the supporting tissues to produce and maintain intercellular substances. Direct proof of this conclusion has been obtained in study of teeth in regard to dentin, in the study of growth and repair of bone in regard to bone matrix, and in the study of repair of soft tissue in regard to the collagen of connective tissues. Localized hemorrhages are a common and conspicuous symptom in scurvy. These studies suggest that the extravasations of blood may be due to a lack of cement substances in the blood vessels, in harmony with the researches of Aschoff and Koch [3] on human material. Wolbach and Howe assert that the proliferative power of epidermis, endothelium, fibroblasts and osteoblasts is not diminished in scorbutus. They believe that the failure of capillary formation can be explained reasonably, according to knowledge of other intercellular substances, as due to failure of endothelial cells to form cement substance. In the light of their histologic examinations, the Boston pathologists advance the theory that the failure of cells to produce intercellular substance in scorbutus is due to the absence of an agent common to all supporting tissues which is responsible for the setting or jelling of a liquid product.

Such considerations suggest a new approach to the study of the physiology of intercellular materials. It is noteworthy that the various avitaminoses are beginning to show their histologic pathogenesis. The more spectacular features of vitamin deficiency—the subtle modes of production, the astounding recoveries, and the minute amounts of actual dietary substance that determine nutritive success instead of disorder—are being supplemented by the laboriously secured substantial evidences of the underlying morphologic changes. Only recently, occasion arose to record [4] the fact, likewise contributed by Wolbach and Howe,[5] that

1. Hess, A. F.: Scurvy, Past and Present, Philadelphia, J. B. Lippincott Company, 1920.

2. Wolbach, S. B., and Howe, P. R.: Intercellular Substances in Experimental Scorbutus, Arch. Pathol. 1: 1 (Jan.) 1926.

3. Aschoff, L., and Koch, W.: Scorbut, eine pathologisch-anatomische Studie, Jena, Gustav Fischer, 1919.

4. A New Feature of Vitamin Deficiency, editorial, J. A. M. A. 85: 2035 (Dec. 26) 1925.

5. Wolbach, S. B., and Howe, P. R.: J. Exper. Med. 42: 753 (Dec.) 1925.

in protracted deprivation of fat-soluble A vitamin, keratinization of epithelial tissues is the conspicuous pathologic defect. There is a widespread tendency for a transformation of secreting and ductal columnar epithelium, or of transitional epithelium, into the heavily hornified type normally serving for protective purposes. Long known to occur in the eye and parocular glands, the change is now recognized as a more general one in this type of avitaminosis. Following lack of vitamin B, the nervous tissues may become involved; with a shortage of vitamin A it is the epithelium, and in deprivation of vitamin C the connective tissues that are profoundly affected. Such knowledge, firmly established, represents a marked step in advance in the domain of pathogenesis.

PRECAUTION IN TONSILLECTOMY

The much discussed problems of tonsillectomy are difficult to approach from any angle without emerging into controversial opinion. The debate frequently is not a calm discussion based on ascertainable facts or indications, but an outburst of fixed convictions delivered with insistence on a preconceived theory. Let us insist at the outset that tonsillectomy has not only its positive indications but also certain presumptive advantages in the pursuit of health: a diseased tonsil is an admitted menace.[1]

Whatever the uncertainties regarding the needs of tonsillectomy may be, there is growing evidence that the operation should not be too lightly regarded. Not every person is included in statistically favorable records of operative benefit. The very circumstance that now and then some writer regards it as worth while to designate the removal of the tonsils emphatically as a major operation directs attention to the uncertainties cropping out in medical minds. In the case of the major risks, the surgeon inevitably dwells on preoperative needs and postoperative dangers; he attempts to foresee and forestall unfavorable consequences.

The growing prominence of tonsillectomy in everyday practice has accordingly attracted attention to possible unpleasant sequelae. To some of these Daland,[2] for example, has directed attention, reviewing the disagreeable complications represented by abscess formation. Myerson,[3] too, has stressed the importance of careful preoperative survey to rule out pulmonary disease and other menacing conditions in the pulmonary tract. A particularly important observation has lately been stressed by Zingher,[4] as the result of his experience in the New York City Department of Health.* He has pointed out that diphtheria is likely to develop in a patient who has just been submitted to tonsillectomy and adenoidectomy, if the person is susceptible, as can be shown by a positive Schick test, and if he is a carrier of virulent diphtheria bacilli. While these three factors—absence of general immunity to diphtheria, presence of virulent diphtheria bacilli in the nose or throat, and an operation, such as tonsillectomy —may not come together frequently, Zingher believes that when they are present in the same person diphtheria is quite certain to follow and the disease is likely to prove unusually dangerous. The serious nature of the superimposed diphtheria arises, he adds, from the danger of an early and rapid absorption of a fatal dose of toxin from the extensive raw surface, and the difficulty of recognizing the disease in the sloughing postoperative membrane until much valuable time has been lost and the opportunity for effective administration of antitoxin has slipped by. Diphtheria may also readily develop as a result of a superimposed infection with diphtheria bacilli occurring in a susceptible person from one to two weeks after an operation on the tonsils and adenoids. At this time, the wound has not yet completely healed, and the resistance of the mucous membrane to infection is still below normal.

These considerations are borne out by the records of actual large clinical observation. In view of the findings reported, Zingher recommends that nose and throat cultures for diphtheria bacilli be taken as a routine before such operations as tonsillectomy and adenoidectomy. If the cultures are positive, a prophylactic dose of diphtheria antitoxin should be administered if necessary. In carriers who are to be treated by the removal of tonsils and adenoids, it is especially important to make certain that the patient either gives a negative Schick reaction, or, if a positive Schick reaction is obtained, that he receives a prophylactic dose of diphtheria antitoxin.

The foregoing observed features of tonsillectomy emphasize in a new way the local resistance of the intact normal mucous membranes against invasion through infectious micro-organisms. The regional protection of carriers against localized pathogenic forms and their toxic products represents a mode of highly effective defense that deserves to be better understood. It appears that successful invasion by one harmful infectious agent, such as the diphtheria organism, may break down the previously competent local protection against another harmful implanted form, such as the germ of scarlet fever. In other words, the scarlatinal streptococcus may be present in the throat passages but remain harmless for the time being, until the attack of diphtheria destroys the local resistance of the mucous membrane to infection with this pathogenic organism. Just as the local resistance of the normal mucous membrane may be destroyed by an inflammatory process such as a cold or an infection, it may be impaired by tonsillectomy. Trauma may destroy the nonspecific local protection of the patient.

1. Tonsillectomy as Protection Against Infection, Current Comment, J. A. M. A. **83**: 1513 (Nov. 8) 1924.
2. Daland, Judson: Bronchopneumonia and Abscess Secondary to Tonsillectomy, Arch. Otolaryngol. **1**: 131 (Feb.) 1925.
3. Myerson, M. C.: Lung Abscess Following Tonsillectomy, Arch. Otolaryngol. **1**: 137 (Feb.) 1925.
4. Zingher, Abraham: Diphtheria Following Tonsillectomy, Am. J. Dis. Child. **31**: 72 (Jan.) 1926.

THE SPLEEN IN MEASLES—AN OVERLOOKED SYMPTOM

In the course of the current popular pastime of subjecting medicine to criticism from every conceivable angle, it has sometimes been intimated that the twentieth century physician is endeavoring to become a biophysicist and a biochemist rather than a clinician. Generalization of any sort is a venturesome procedure, particularly when it fails to rise above the haphazard method of jumping at conclusions. When a student of the present generation is reminded of "the golden age of bedside diagnosis" in which the unaided organs of sight, sound and touch were trained to remarkable accomplishment, he sometimes wonders whether, after all, the armamentarium of instruments of precision and the cyclopedia of test reactions that he has acquired in the course of his modern training are to be a handicap rather than a help. He reads the admonition of the late Sir James Mackenzie,[1] who, while far from decrying the importance of the advances that have been made by so-called laboratory methods of clinical diagnosis, frankly rates their practical value to the general practitioner as small compared to the information to be gained by recognition of symptoms through avoidance of "the more intricate methods of examination."

Perhaps the student will begin to wonder whether he shall discard his thermometer, stethoscope and manometer. Let him take courage, incentive and inspiration from the fact that the devotees of the simpler methods have not exhausted the possibilities of discovery. One might suppose that none of the common manifestations of a universally familiar disease such as measles had escaped recognition. Verily, physicians unhampered by microscopes or test tubes have observed generation after generation of measles patients. Yet it remained for Koplik,[2] only thirty years ago, to emphasize the significance of the oral rash and mouth spots that commonly bear his name. And only now has it at last been made unmistakably clear through the records of Bleyer[3] of the St. Louis Children's Hospital that enlargement of the spleen should be included in the symptomatology of measles.

He remarks that it is, of course, a common thing in clinical work to encounter a spleen that can be felt below the costal margin; but the almost abrupt appearance of the spleen during the eruptive stage of measles, and the suddenness of its disappearance as the rash subsided, were quite unexpected and prompted an inquiry into the frequency of this phenomenon in this disease. The enlargement is evidently related to the virus of the disease. The change in the spleen is coincident with the eruptive stage of this disease, both as to appearance and as to disappearance, the greatest enlargement as to frequency and size being noted on the third and fourth days of the rash. Contrary to what might be expected, the severity of an attack in these patients does not seem to make the occurrence of enlargement of the spleen higher than is found to be the case in those that ran a milder course. And all of this is the simple finding regarding one of the largest organs in the body in the examination of a few hundred sick children, while half a hundred textbooks have denied, disregarded or debated the symptom.

1. Mackenzie, James: Symptoms and Their Interpretation, New York, P. B. Hoeber, 1913.
2. Koplik, Henry: Arch. Pediat. **13**: 918, 1896.
3. Bleyer, Adrien: Enlargement of the Spleen in Measles, Am. J. Dis. Child. **31**: 26 (Jan.) 1926.

Current Comment

COLLEGE PHYSICAL EXAMINATION THE START OF A LIFE HABIT

Health examinations on entrance into college or university are becoming the rule rather than the exception. In the majority of institutions, the examination is given after the student has matriculated. Sixty-eight of 152 institutions require the examination before the student is admitted. Of these, fifty-two require that the examination be performed by a college physician; and the remainder, that the student possess a certificate of health from his family physician.[1] The advantages of having the examination made by the college physician who will be in charge of the student's health for the next four years, and of having this examination prior to matriculation, are obvious. The danger is that the enormous amount of work that must be crowded into a few days will lead to undue haste. At the College of the City of New York, where an examination before admission has been required for fifteen years, the danger of haste has been obviated by having numerous examiners and recorders on the spot and by instructing in detail each participant, whether clerk, examiner or examinee, exactly what he is to do and when. In addition, instructions are furnished to meet the emergencies that will arise when some person fails to live up to the system. Perusal of these instructions gives the impression of a multitude of definite objectives, intricately synchronized, as highly developed as a battle offensive. The numerical results at the College of the City of New York are important. They show that students who could not hope to stand the gaff in college or who might be a menace to their associates were excluded from college or their admission was deferred until their physical condition had been sufficiently improved. These results also show the basis on which physical defects were followed up and corrected. But tabular results have no place here, and it may be that the most important objective of all is expressed in the words, "We regard this health examination program as a part of an earnest endeavor to give these boys a convincing experience with scientific medical examinations. We will measurably fail in our work if we do not produce in these young citizens in the making the custom of periodic health examination and the experienced selection of scientific health service after graduation."

1. Storey, T. A.: Health Examination a Prerequisite to Matriculation in College, Report at the Society of Directors of Physical Education in Colleges, New York, Dec. 31, 1925.

VETERANS' BUREAU TEST OF CLINICAL THERMOMETERS

An article in this issue [1] presents to many physicians their first knowledge of how a clinical thermometer is manufactured. In part, this article attempts to show that the reputable manufacturer of a clinical thermometer is worthy of confidence and that it is unnecessary to hedge him in with legislation which will increase expense to the physician and the public. Recently, the Veterans' Bureau has had tested 508 thermometers taken at random from a purchased lot of 6,000. The published result [2] shows that "about 3 per cent would be unreliable and about 2 per cent would have unduly large errors." Although this is not a perfect score, it is a creditable one. In this instance, without compulsory legislation manufacturers have demonstrated the intention of turning out dependable instruments. On payment of a small fee, any one can have his thermometers checked by the Bureau of Standards.

KAOLIN IN INTESTINAL DISEASE

Chinese medicine is giving way to Western scientific medicine even in China. Nevertheless, through centuries of experience, Chinese physicians have discovered a number of remedies which Western physicians now use.[3] In Western countries, kaolin has been used in the manufacture of porcelain and toilet powder. Pharmacists have used it as a filtering material, as a base for poultices (cataplasma kaolini, N. F.), as an excipient in the making of pills, and as a dusting powder for wounds and ulcers. It has been recommended for gastric hyperacidity. For centuries, Chinese physicians have used kaolin in fevers and intestinal disorders, including cholera. In the latter part of the nineteenth century, it was being used by Julius Stumpf of Wurzburg, externally for septic wounds and ulcers, and internally in large doses for Asiatic cholera.[4] At the present time experiments [5] seem to confirm the scientific basis of its use. Work in vitro, on animals and on man has demonstrated that it is not an antiseptic agent but that in fluid mediums, if kept in motion, kaolin will carry down with it large numbers of bacteria. More than this, it combines with the toxins and toxic products of cholera, of the typhoid dysentery group of organisms, and, apparently, with putrefactive and proteolytic bacteria. In this way, from 30 to 60 Gm. administered daily will change the intestinal flora of an adult from a predominantly proteolytic to an aciduric type. Recent workers in the field have successfully employed kaolin in Asiatic cholera, bacillary dysentery, chronic ulcerative colitis and acute enteritis. A corollary of this important finding will be that certain groups of inexact thinkers will enlarge on the fact that superstitious and empiric practitioners used kaolin centuries before pharmacology and scientific medicine recognized its value. An accurate mind, however, will recall that the same school of medicine that discovered the use of kaolin also credited the ashes of an ancient comb as a remedy for hairball in the stomach.

1. Noyes, Bradford: Clinical Thermometers, this issue, p. 1239.
2. Report of the U. S. Bureau of Standards on the Results of the Test for Accuracy of Six Thousand Clinical Thermometers, U. S. Veterans' Bureau M. Bull. **2**: 402 (April) 1926.
3. Wang, Chi-Chen: Chinese and Western Doctors, Hygeia **4**: 154 (March) 1926.
4. Treatment of Cholera and Various Bacterial Affections with Fullers' Earth, Miscellany, J. A. M. A. **47**: 2113 (Dec. 22) 1906.
5. Braafladt, L. H.: The Effect of Kaolin on the Intestinal Flora in Normal and Pathological Conditions, J. Infect. Dis. **33**: 434 (Nov.) 1923, and University of Chicago Libraries, private edition.

AMERICAN IDEALISM IN PUBLIC HEALTH

Geographic distance furnishes sometimes a perspective that permits clear evaluation of accomplishments. A recent Brazilian author [1] has traced the development of modern preventive medicine, dividing it into three periods: the work of Chadwick and the English school; Pasteur and Koch's contributions; American idealism. While the two first steps were epoch making, the actual prevention and control of epidemic diseases depended on the organization of an efficient public health service. This is the task which, according to Clark, the United States has successfully performed for the last twenty years. It demanded a combination of such rare qualities as idealism, philanthropy, generosity, daring, perseverance, and devotion to duty. These the Brazilian scientist could find nowhere else in his historical survey, thus justifying America's leading rôle in modern social medicine. Americans were the first to understand the need of reforming medical education in order to cope with the many-sided problems of social medicine. Their altruism led them to establish public health schools, not only in their own country, but abroad—Brazil, China, England. "American prominence in health work is so obvious that even London, the capital of aristocracy, is reorganizing its university and equipping its public health school with American money." This international spirit in itself represents a contribution of the first rank to modern hygiene. As instances of the practical American spirit, Clark cites the creation of small scattered laboratories, pure food laws, industrial sanitation, hospital service, milk safety campaigns, canned goods, and even the Volstead law. Clark also renders a tribute to the banishment of the terminal disinfection bugbear by the health officer of Providence, R. I. His name, however, is given as Charles Chaplin. One may depend on foreigners for perspective and even appreciation, but when it comes to spelling names, the mind sometimes succumbs to Hollywood.

LACTIC ACID AND MUSCULAR FUNCTION

"The problem of the activity of muscle," Meyerhof has written, "has accompanied physiology, so to speak, from the cradle." It is nothing more than the question as to how chemical energy is transformed in the body into mechanical work. The older theories that the performance of a muscle during contraction is closely analogous to what happens in a heat engine have been abandoned. An acceptable hypothesis, as Howell has pointed out, should explain the mechanism by means of which the shortening of the muscle is produced, the

1. Clark, Oscar: A Folha Medica, Jan. 16, 1926, p. 22.

nature of the energy which is thus transformed into mechanical work, and the origin of this energy from the chemical reactions that take place in the stimulated muscle. Apparently this tissue is a chemodynamic machine in which chemical energy is converted to work without passing through the form of heat. The demonstration of the appearance of lactic acid during contraction in the lack of oxygen or in rigor, and its disappearance on oxidative recovery of the muscle, formed what has been termed the first bridge between the biochemistry of muscle and its performance of work. According to the Hill-Meyerhof theory of muscle action, carbohydrate is converted into lactic acid, which is subsequently in part destroyed by oxidation and in part transformed into glycogen retained in the contractile tissue. The genesis of the lactic acid thus becomes a very significant feature of the process. There have been various speculations as to the immediate precursor of the lactic acid in its production from sugar in muscle. Meyerhof,[1] whose work in this field has earned him a Nobel prize, has lately championed methyl glyoxal, $CH_3.CO.CHO$, a carbohydrate derivative readily transformed by tissues and tissue extracts into lactic acid, $CH_3.CHOH.COOH$, under suitable conditions. The successive steps from muscle glycogen to muscle lactic acid are likely soon to be demonstrated with some approach to accuracy in the attempted explanation of what happens during the act of contraction.

1. Meyerhof, O.: Beobachtungen über die Methylglyoxalase, Biochem. Ztschr. **159**: 432 (June) 1925.

Association News

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

Held in Chicago, Feb. 15, 16, 17 and 18, 1926

(Continued from page 1137)

AMERICAN CONFERENCE ON HOSPITAL SERVICE

DR. SIGMUND S. GOLDWATER, New York, in the Chair

FEBRUARY 18

Individual Versus Group Responsibility for the Care of the Hospital Patient

DR. S. S. GOLDWATER, New York: The American Conference on Hospital Service is a delegate body made up of representatives of some nineteen national organizations that have a common interest in hospital betterment. Hospital methods, standards and practice cannot be ignored in any survey of medical education. The standing of a hospital might to a certain extent be gaged by the number of consultations that took place between members of the various clinical branches of the service.

DR. HENRY A. CHRISTIAN, Boston: This address was published in full in the Hospital Number of THE JOURNAL, April 3, 1926, page 993.

DR. HUGH AUCHINCLOSS, New York: This address was published in full in the Hospital Number of THE JOURNAL, April 3, 1926, page 995.

The Adaptation of Medical Education to Changing Clinical Practice

DR. LOUIS B. WILSON, Rochester, Minn.: The changes occurring in clinical practice do not affect materially the great body of medical practice. Only good, general medical education and good horse sense are necessary for the care of the bulk of patients. Attention is so apt to be turned to the special condition that we forget these things. In some things, medical practice is changing; first, I think, in the type of the patient. Most of the changes are coming in the field of occupational diseases. More than this is the change in additional methods of diagnosis. Third, there is a great change in the additional methods of treatment. What are the relationships of the hospital to these factors? The medical graduate is to receive his knowledge of occupational diseases in the hospital. The second new type of patient is the group of the supposedly well, the possible sick. The hospital has a very large responsibility in maintaining a diagnostic clinic for inspectorial service to the well who may possibly be sick. Mrs. Jones comes to us from a renter's farm in northern Iowa. She has heart disease. We undertake to tell her how she shall live. She is told by a man who has no conception of the conditions on that renter's farm. Should not the hospital, then, get in closer touch with the home conditions of the patient? The same is true of the mental hygiene of the patient. Are we giving enough attention to this in the hospitals?

DR. ALLEN O. WHIPPLE, New York: I shall deal with only one phase of this subject; namely, the organization of the university hospital outpatient clinic in its relation to clinical teaching. The university outpatient clinic should have the following features: It should occupy a central position in the hospital in close contact with the ward and laboratory units. The attending men on the ward services should work in the outpatient clinic, in the consultation and follow-up units. The men holding senior positions in the outpatient clinic should be given work in the ward services. The admitting unit to the entire hospital should be in the outpatient clinic and should include the emergency unit. The unit record system should be used in all clinical cases, outpatient and inpatient, and should be filed in a record room situated in the outpatient clinic in close contiguity with the admitting unit. The follow-up, social service and consultation units should be located in each major therapeutic clinic. It is of great advantage to have the medical and surgical clinics in close contiguity and operating at the same hours of the day. Consultation units should be composed of medical and surgical men to study groups of cases. These men should agree on the therapy in the individual case, and should see these patients as follow-up cases whether they are treated medically, surgically or by any other form of therapy. These units should have working in them the attending physicians from the inpatient service of the hospital, the outpatient physician and surgeon interested in the group of cases under study, interns and medical students. Patients referred to the consultation units may come from any part of the clinic, may be sent in by any physician, or may be sent from any part of the ward service either as inpatients or as follow-up cases after leaving the ward service.

DISCUSSION

DR. WILLARD C. RAPPLEYE, New Haven, Conn.: In the advancement of medical science we come to the division of labor into two large groups, general practice and the specialty. The majority of the teachers in the schools of medicine today are specialists. Interlocking and interconsultation have got to be worked out in any scheme in which we have a division of labor. In medical education we are attempting to teach altogether too much. The student goes out without having in mind the relative proportion of things. When and how and to whom patients should be referred is a matter of intricate judgment, but it is the thing that the general practitioner will have to be able to recognize. Dr. Christian asked yesterday how effective we have been in producing physicians to take care of the public health of the community. One of the important keys in public health is the practitioner of medicine. There will come a division of labor that will throw on him as important responsibilities as he has ever had, but some amount of differentiation. We have also the problem of bringing adequate medical service to the community and to the individual at a reasonable cost. We have not yet been able to educate the community to the value of the proper kind of medical services.

DR. CHARLES P. EMERSON, Indianapolis: That there is a very definite lack in the way we physicians present our subject to the public is beyond dispute. The men who have spoken have all come to the same conclusion, a personal responsibility—very little division of labor, but a personal responsibility of the one man who will call to his aid those who he feels can help him solve the problem in the individual case. The more we group our men, the worse results we get. The responsibility rests with one single man and never can rest with a group. When we are ready so to train our students that they will study their cases thoroughly and not pass the responsibility to a dozen laboratories to save time, we shall be pretty near the solution of this problem. The more the laboratory work is done, the more accurately it is done, the better it is done, and the more his responsibilty increases in using the results of that laboratory in order to interpret those reports in terms of the patient.

DR. CHRISTOPHER G. PARNALL, New York: We live in an era of change, if not of chaos, both in teaching and in medical practice. The pendulum, of course, swings the full swing to the two extremes; ultimately we find the middle ground. We have seen the passing of the family physician and we have seen the advocacy of group practice to make up for the deficiency of the family physician. Now we are seeing the failures of group practice. The old family physician, after all, is a good deal of a myth. In practically every community there was a certain proportion of practitioners who were able men, not because of their extreme skill in diagnosis, because as a matter of fact, if we tell the truth, they were about as often wrong in their diagnosis as they were right. Their success can be attributed to their empiric therapy. But, after all, they were successful largely through the fact that they came into intimate contact with patients and were able to study their idiosyncrasies and to give them common sense advice. The present type of physician who is being developed in our medical schools under present plans of medical education is vastly superior in all respects to the old time family physician. He is better material in the first place; better educated, better trained, and in the community he will occupy just as important a place as his predecessor. Methods of teaching and practice have got to be judged from two points of view: first, the good of the patient; second, the good of the student or the physician himself. Any method that does not work out to the advantage of the patient is obviously not a good one from the standpoint of the physician. Nothing can take the place of personal contact and personal responsibility between the physician and the patient. The individual physician in hospital practice, particularly, should be held responsible for treatment and for results. When he is held responsible for results, he is going to call consultation when it is necessary, and he will avoid consultation when it is unnecessary; incidentally, he will become self-reliant; he will teach self-reliance to the students and younger physicians associated with him.

DR. I. D. METZGER, Pittsburgh: In the effort to make use of all the specialties and all the accessory investigations that might be helpful to the patient, we have come to the other extreme in that practically every staff man wants to use every department of the hospital in the care of his patient. There must be absolutely set some definite responsibility on some definite person for the conduct of the case throughout. The good general practitioner is not one who can do everything in medicine, but he is the one who is keenest in determining the needs of each case and the one who has the most efficient specialists at his command. He assumes the responsibility of the case, but nevertheless has these reserves whom he may command. The trouble is that most of the general practitioners feel that the case is lost to them as soon as the specialist gets through. The matter of health examination was brought up this morning. That is the most serious of all problems that the general practitioner has to deal with, and it is that we need to think of in our development of medical education. The matter of history getting is important. Sense of responsibility is the keynote to the physician. In nearly all the teaching hospitals there are men who see that there is correlation in the work. The general hospital does not have that kind of a person, and we have found that the best man to do that for us is a laboratory man. That man ought to be a diagnostician who can go about the hospital in the capacity of consultant.

THE DALLAS SESSION

Demonstrations of Periodic Health Examinations

Practical demonstrations of periodic examinations of apparently healthy persons will be given in Hall F, Automobile-Manufacturers' Building, Fair Park, at 8:30 a. m. and 4:30 p. m., April 20. These examinations will be conducted by Drs. D. W. Carter, Jr., George L. Carlisle, Homer Donald, John R. Lehman, J. Shirley Sweeney and Henry M. Winans. They are open to all members of the American Medical Association.

CORRECTION

Teachers of Diseases of Children

The Association of American Teachers of Diseases of Children will meet in Dallas, Tuesday, April 20, instead of April 19 as noted in THE JOURNAL, March 27.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Diphtheria Control in San Jose.—The health department of San Jose has conducted an educational campaign against diphtheria for the last four years, and at least 3,000 children have been given toxin-antitoxin. The annual report of the city health department for 1925 shows that only forty cases of diphtheria occurred in the city, which is a great decrease over any other year since 1921. The incidence of other communicable diseases in San Jose maintained about the same average as it did in other cities in the state.

New Welfare Clinic.—Twenty-seven physicians of Santa Monica and vicinity have agreed to give part time free of charge to the work of the recently established Santa Monica Welfare Clinic in order to provide medical service for residents who are unable to pay. The clinic, it is reported, is sponsored by the Santa Monica Welfare Council and by the Women's Welfare Club and by the local branch of the Los Angeles County Medical Society. Dr. Howard Wilson Levengood has been elected chairman of the staff, and Dr. Louis E. Mahoney, secretary.

COLORADO

Typhoid Due to Raw Milk.—There were forty cases of typhoid in Denver from February 26 to March 14, most of which the city health department traced to milk from one dairy. It was found that of the forty patients, twenty-five used milk from one dairy and thirteen from another dairy; then, that the second dairy sold raw milk to the first dairy and was therefore at least indirectly involved in thirty-eight of the forty cases; one patient was the son of the owner of this dairy (although probably not the source); his father bought milk from a ranch whose employee had typhoid some years ago, and the manager himself had it in January. It is significant that milk sold by this ranch to another dairy which pasteurized its milk caused no typhoid along its route. Vigorous action was taken to prevent additional cases; an order was issued requiring all milk sold in Denver to be pasteurized; March 11, twenty-three dairymen attempted to deliver raw milk, and were summoned to court and fined $10 and costs each. Denver already had an ordinance providing that a dairyman selling raw milk must produce it all on his own place. Thus the dairy which apparently was responsible for the outbreak of typhoid had sold raw milk obtained from the ranch, regardless of the ordinance.

DISTRICT OF COLUMBIA

Dr. Hrdlicka Wins British Medal.—The Royal Anthropological Institute of Great Britain announces that the Huxley Memorial Medal for 1927 will be conferred on Dr.

Ales Hrdlicka, Washington, D. C., who will go to London in November of that year to deliver the Huxley lecture and to receive the medal. This is said to be the second time in twenty-six years that an American has received this award. Prof. William Z. Ripley, Ph.D., of Harvard University, having won the Huxley Medal in 1908. Dr. Hrdlicka has for years been curator of physical anthropology at the U. S. National Museum and has conducted anthropologic expeditions since 1898 in this and other countries. He is editor of the *American Journal of Physical Anthropology*, and the author of numerous books on anthropology and related subjects. One of his late expeditions to study the origin of man ended in October, 1925, with his return to this country from India, Ceylon, Java, Australia and South Africa.

ILLINOIS

Superintendent Appointed.—Dr. Duncan D. Monroe, formerly of Dawson Springs, Ky., has been appointed superintendent of the new $150,000 Madison County Tuberculosis Sanatorium, which will be formally opened, May 7.

Joint Meeting of Radiologists.—The Chicago Roentgen Society and the Central Illinois Radiological Society will hold a joint meeting at Champaign, May 18, during the annual meeting of the Illinois State Medical Society; physicians are invited to attend. Programs can be obtained by writing to Dr. Harold Swanberg, 731 Hampshire Street, Quincy.

Medical Movies.—The Adams County Medical Society, Quincy, held "medical movie night," April 12, when the film by Dr. Lewis G. Cole, New York, on "Gastric Motor Phenomena" was shown, also the film "How the Fires of the Body Are Fed," and several reels of various eye, ear, nose and throat operations on cadavers, through the courtesy of Drs. Walter Stevenson and Ray Mercer; another feature of the program was the report of the health survey of Adams County read by Dr. J. W. H. Pollard, now health officer of Evanston.

Personal.—Dr. Howard L. Metcalf, Springfield, has been appointed medical director of the Springfield Life Insurance Company, and Dr. John C. Eigenmann, Mechanicsburg, assistant medical director.——Dr. Thomas Parran, Jr., U. S. Public Health Service, who has been on duty with the Illinois Department of Health in connection with rural health work, has been relieved; he will go as a representative of this country to the International Health Conference in Denmark in May. A farewell dinner was tendered Dr. and Mrs. Parran at Springfield, March 27.——A farewell dinner was recently tendered Dr. Clarence T. Roome, Evanston, who recently resigned as health officer after fifteen years' service.

Chicago

Medical Care at Eucharistic Congress.—More than 400 Chicago physicians, and thousands of nurses and orderlies, according to *Hospital Progress*, will be available during the International Eucharistic Congress, June 20-24, to care for the health of the great number of persons that is expected to be present. There will be a temporary hospital at St. Mary's on the Lake at Mundelein, Ill., eight first aid stations near Grant Park Stadium in Chicago, where the principal ceremonies will be held, and other stations at the Municipal Pier and at the Coliseum.

Personal.—Dr. Harold Douglas Singer has resigned as medical director of the Illinois Society of Mental Hygiene. ——Dr. Emmet Keating spoke on "Medical Policies and How They Affect You" at a luncheon given by the Women's Bureau of the Illinois Manufacturers' Association at the Hotel La Salle, April 10.——Mrs. Theodore B. Sachs, superintendent, Chicago Tuberculosis Institute, is a member of a committee that met in New York, April 16, to prepare for the meeting of the International Union Against Tuberculosis and the National Tuberculosis Association in Washington, D. C., in October. Further information about these meetings can be obtained from the Chicago Tuberculosis Institute, 360 North Michigan Avenue.

Dinner to Dr. Davison.—Friends of Dr. Charles Davison, emeritus professor of surgery, University of Illinois College of Medicine, gave a dinner in his honor at the Congress Hotel, April 16, at which a bust of the guest of honor made by Lorado Taft was presented to the University of Illinois. A certificate was presented to Dr. Davison, appointing him attending surgeon emeritus at the Cook County Hospital, on which staff he has served continuously for thirty-two years. Among the speakers at the dinner were David Kinley, L.L.D., president of the University of Illinois; Dr. David J. Davis, dean of the college of medicine; Dr. Edward L. Heintz, an alumnus of the university and chairman of the committee in charge of the dinner; Lorado Taft; Anton J. Cermak, president, board of county commissioners, and Hon. William L. Abbott, ex-president of the board of trustees of the university.

INDIANA

Extramural Postgraduate Courses.—At the invitation of various county medical societies, the Indiana University School of Medicine is conducting postgraduate courses in surgery at Terre Haute, Seymour, Columbus and Madison. The courses are of eighteen hours each and the subjects have been previously agreed on by the societies and the medical school. It is pointed out in the *Journal of the Indiana State Medical Association* that the function of the school is not limited to training new physicians, but includes helping keep physicians abreast of the progress in medicine. The school at Indianapolis includes the medical school, the James Whitcomb Riley Hospital for Children and the Robert W. Long Hospital, which are organized as integral units of the school, the training school for nurses and the medical social service department. The last three years of the course are given in the city and the first year at Bloomington.

Society News.—The Tippecanoe County Medical Society and the Lafayette Dental Society held a joint meeting, recently, at Lafayette; a clinic was held at St. Elizabeth's Hospital and a banquet at the Lafayette Club. William H. G. Logan, M.D., D.D.S., dean, Chicago College of Dental Surgery, and former president of the American Dental Association, gave an address.——Every practicing physician in Rush County is an active member of the county medical society for 1926.——Dr. Henry S. Plummer, Mayo Clinic, Rochester, Minn., conducted a clinic before the Tippecanoe County Medical Society, St. Elizabeth's Hospital, March 11, on "Disorders of the Glands of Internal Secretion," and also addressed the society at a banquet at the Lafayette Club on "Endocrinology."——Dr. Martha Tracy, dean, Women's Medical College of Pennsylvania, Philadelphia, addressed the Muncie Academy of Medicine, Muncie, recently, on "Food and Efficiency."

IOWA

Notice to Tourists.—Information has been received advising tourists crossing Iowa to take advantage of the hard surface roads in the northern part of the state. The local newspapers have advised tourists from east and north to travel to Omaha by way of Sioux City; the roads in southern Iowa have not yet been placed in all-year-round travel condition.

Revocation of License Upheld.—The Iowa Supreme Court, in a decision handed down, March 9, upheld the state board of medical examiners in revoking the license of Dr. Clarence H. Hanson of Wright County, Sept. 24, 1924. Dr. Hanson was charged, it is reported, with intoxication and with two convictions in federal court for violation of the Harrison Narcotic Act.

Supreme Court Sustains Board of Health on Vaccination.—The Supreme Court of Iowa has sustained the decision of the lower court in the case of Carlyle M. Baehne, who, through his father, sued the local board of health and the school district to compel them to permit the boy to attend school without being vaccinated. The trial, which was held in January, 1925, concerned the question of issuing an injunction against the school board and the school district to set aside their order prohibiting unvaccinated pupils from attending school. Among other things, the judge said that "if there is evidence to warrant the school board in determining that there was an epidemic of smallpox, the discretion of the board cannot be interfered with by the court." The case was appealed and the supreme court held that the temporary exclusion of an unvaccinated child from school while an epidemic prevails does not present a case so compelling that the district court must issue a writ of injunction against the school and health authorities on petition of the parents.

MARYLAND

Expedition to Study Hookworm.—Plans have been completed for a research expedition to Central America under the leadership of William W. Cort, Ph.D., professor of helminthology, Johns Hopkins School of Hygiene and Public Health, for the purpose of improving control measures used to combat the hookworm. The expedition is part of a program of cooperation between the department of medical zoology at Johns Hopkins and the International Health Board, which has been carried on by Dr. Cort in various countries since 1921. The commission to Central America will be divided into two groups, one going to Panama, the other to Nicaragua,

one group sailing from New Orleans about the first week in June, and consisting of Donald L. Augustine, S.D., assistant professor of helminthology, department of comparative pathology, Harvard University, Boston, and William A. Riley, Ph.D., professor of animal biology and head of the department, University of Minnesota, Minneapolis. The other group, which will leave New York for Nicaragua the latter part of May, will consist of Norman R. Stoll, Sc.D., associate in helminthology at Johns Hopkins; Harold Brown, assistant in helminthology at Johns Hopkins, and Maurice C. Hall, Ph.D., chief, zoological division, Bureau of Animal Industry, U. S. Department of Agriculture. Dr. Cort will divide his time between the two groups to coordinate the work.

MASSACHUSETTS

No Award of Boylston Prize.—The Boylston Prize Committee of the Harvard University Medical School, Boston, has voted not to award the Boylston Prize, as none of the essays submitted are worthy of the prize. By notifying the secretary, Dr. Henry A. Christian, Peter Bent Brigham Hospital, Boston, of the legend on the essay and the address, essayists may have their papers returned on request.

Breast Feeding Demonstration. — The Massachusetts Department of Health requests the cooperation of the medical profession in the establishment of breast feeding demonstrations in four cities and towns, which have been selected because the public health nursing is well organized in those communities. The object is to show that it is possible and desirable to increase the percentage of breast fed babies; the plan is to secure the consent of each physician to have their patients visited by a public health nurse who will see every mother two weeks after the birth. A "form" as a reminder of breast feeding will then be sent to the mother monthly, and will include a return form; every mother who fails to return the form or signifies thereon any difficulties in feeding will be visited by the nurse, and every mother will also be visited when the baby is 6 months of age.

MINNESOTA

State Medical Meeting.—The annual meeting of the Minnesota State Medical Association will be held at St. Paul, May 17-19. There will be a symposium on infantile paralysis by Drs. Carl C. Chatterton, St. Paul; Melvin S. Henderson, Rochester, and Frank W. Whitmore, St. Paul, and a symposium on cardiovascular renal disease by Drs. Hilding Berglund, Minneapolis; Leonard G. Rowntree, Rochester; Charles P. Emerson, dean, University of Indiana Medical College, Indianapolis, and Verne C. Hunt, Rochester. There will be clinics on diseases of the thorax by Drs. Willis S. Lemon and Stuart W. Harrington, Rochester, and on gastric diseases by Dr. Arnold Schwyzer, St. Paul. A novel feature will be the entertainment Wednesday evening given by members of the profession and their families, followed by dancing. The Monday evening meeting will be the usual medical "economics meeting" and the speakers will be Dr. Morris Fishbein, Chicago, editor of THE JOURNAL, "Fads and Quacks"; Dr. Charles P. Emerson, Indianapolis, "Degenerative Diseases and Periodic Health Examinations," and Mr. Herbert R. Galt, managing editor of the *Dispatch and Pioneer Press*. The banquet Tuesday evening will be for physicians only, and among the speakers will be the mayor of St. Paul, the governor and Dr. Charles H. Mayo.

NEBRASKA

Hospital News.—The late Miss Belle Dewey, Omaha, gave about $50,000 toward establishing a ward or a building in connection with the Nebraska Methodist Hospital for the free treatment of poor women suffering from cancer.——The late Martin and Mary Ellen Duey, Chester, bequeathed $9,500 to the permanent endowment fund of the Methodist Hospital.

Fifty Years in Practice.—Dr. John A. Waggener, Humboldt, celebrated the completion of his fiftieth year in the practice of medicine, recently, and was presented with a gold watch and chain by friends at a dinner, and the following evening was guest of honor at the annual dinner of the chamber of commerce. Dr. Waggener has three sons who are physicians..

Society News.—Dr. Herman L. Kretschmer, associate clinical professor of surgery, Rush Medical College, Chicago, addressed the Lancaster County Medical Society, Lincoln, March 20, on "Infections of the Urinary Tract."——Dr. Edward C. Davidson of the Henry Ford Hospital, Detroit, addressed the Omaha-Douglas County Medical Society recently on "The Management of Burns."

NEW HAMPSHIRE

Physicians for Rural Communities.—In view of the publicity given to the scarcity of physicians in rural communities, the secretary of the New Hampshire state board of health announced, March 16, that the following physicans had been admitted to practice under reciprocity arrangements with other states:

Dr. Earl J. Chase, a graduate of Tufts, will locate at Bristol.
Dr. May Jane Rochelle, a graduate of Women's Medical College of Pennsylvania, Philadelphia, will locate near Bethlehem.
Dr. Earl W. Gayer, a graduate of Indiana University Medical College, Indinapolis, has located at Dover.
Dr. Demetrius N. Matsis, a graduate of Tufts, has located at Nashua.
Dr. Barbara Beattie, a graduate of Cornell, has located in Littleton.

NEW YORK

Assembly Approves Medical Bill.—The assembly passed the Webb-Loomis bill, April 6, by a vote of 95 to 33. The senate has not yet acted on the bill; among other things, it provides for the annual registration of physicians and for the appointment of a grievance committee of ten members by the board of regents to pass on complaints against licensed members of the medical profession, and holds fraud or deceit in practice, the conviction of crime or misdemeanor, habitual drunkenness, use of narcotics and deceptive advertising as grounds for revoking a physician's license.

Eye Lectures to School Teachers.—Under the auspices of the National Committee for the Prevention of Blindness and the New York Department of Education, Dr. Emily A. Pratt has, for three months, been lecturing in each of the normal schools of the state on the most progressive methods of preserving the sight of children. The lectures, which will continue until May 1, will be supplemented by demonstrations in public schools, conferences with school superintendents, and talks to parent-teacher associations. New school teachers will thus be able to carry out the laws requiring periodic examinations of the eyesight of children; they will have an understanding of the principles of good illumination and of ocular hygiene in general.

New York City

Professor Watson Comes to Columbia.—According to the *British Medical Journal*, Dr. Benjamin Philip Watson, professor of midwifery and diseases of women, University of Edinburgh, Scotland, has accepted the corresponding chair at Columbia University, and the directorship of the Sloane Hospital for Women.

Dr. Kosseff Appointed Medical Director.—Dr. Abraham Kosseff has resigned as physician in chief at the Sing Sing Prison, Ossining, to become medical director of the Beth Moses Hospital, Brooklyn. Dr. Kosseff graduated from Long Island College Hospital Medical School in 1915, and for the last nine years has been engaged in penal medical work as assistant physician at Sing Sing, then chief physician at Clinton Prison Hospital, Dannemora, and then as physician in chief at Sing Sing. He assumed his new duties March 1.

Baltimore Medical Club.—The spring meeting and banquet of the Baltimore Medical Club of New York, which is com posed of graduates of Baltimore medical colleges who are practicing in this vicinity, will be held, April 29, at the Hotel Commodore. Dr. Arthur M. Shipley, professor of surgery at the University of Maryland School of Medicine, who will be the guest of honor, will make the address, and other entertainment will be provided. Tickets may be obtained from Dr. Louis Winfield Kohn, 425 Park Avenue, New York; six dollars.

Hospital News.—A benefit performance will be given at the Century Theatre, April 19, for the Hospital for Ruptured and Crippled Children; the opera "Pinafore" will be presented. ——The Hospital Information Bureau of the United Hospital Fund has prepared a directory of convalescent homes of New York City and vicinity, one copy of which will be sent free to all charitable agencies on request and extra copies at 25 cents each.—"The Song of Flame" at the Forty-Fourth Street Theater will be given as a benefit for the Lincoln Hospital and Home, April 27.

French Society Buys Site. — The French Benevolent Society announced, March 5, the purchase of a plot of ground on West Thirtieth Street as a site for a new twelve-story hospital building to replace the present French Hospital at 450 West Thirty-Fourth Street. The French Hospital, which was established in 1881, erected the present building, the capacity of which is 105 beds, in 1904. It cared for 2,670 patients in 1925, about 45 per cent of whom received free

treatment. Its policy is said to be nonsectarian, and its help is extended to persons of every nationality. A campaign for $2,000,000 for the new building was opened, March 22.

Courses for Sanitarians.—Columbia University again will offer this summer new courses for the training of sanitarians in epidemiology, industrial hygiene and factory inspection, and will also continue to give the courses that have been offered during the last two years. The period of instruction has been shortened from six weeks to two or three weeks and at the same time the daily sessions lengthened to two or four hours each, in order to serve the convenience of health workers. Application for these and all other courses in public health and preventive medicine should be made to the director of the summer session before June 1. A complete copy of the announcement of courses for the summer session may be obtained from the secretary of the university. The summer session will be from July 6 to August 13.

Personal.—Sir Arthur Newsholme, formerly principal medical officer of the London Local Government Board, is reported to have arrived in this country, April 5, to lecture on public health at leading institutions during the spring and summer.——Dr. Arthur Schueller, Vienna, Austria, addressed the New York Neurological Society, April 6, at the New York Academy of Medicine.——Dr. Aaron S. Maclaire has been promoted to adjunct professor in neurosurgery at the New York Polyclinic Hospital and Post-Graduate Medical School. ——Dr. Alfred M. Hellman gave a dinner at the City Club, April 3, in honor of R. L. Kahn, Ph.D., of the Michigan State Health Department, Lansing, which was attended by about fifty physicians; Dr. Kahn had been invited to demonstrate the Kahn Precipitation Test before the New York State Medical Society, which was in session at the Waldorf-Astoria Hotel.——Dr. Patrick J. Murray, for eight years chief surgeon of the police department, has been retired, and Dr. Daniel J. Donovan has been appointed to that position. Dr. Donovan has been a police surgeon for twenty-two years. ——Dr. Julius Lewis Amster has been appointed attending surgeon to the Jewish Memorial Hospital.

NORTH CAROLINA

Tarboro Dairy.—The city of Tarboro has just ended its ninth year of owning and operating a municipal dairy. Tarboro, a city of about 5,000 persons, buys milk from farmers at 12 cents a quart, and after pasteurization, distributes it to consumers at 17 cents a quart. There has been a decrease in the amount of milk-borne disease since Tarboro has been operating the dairy.

Sanitary Survey of Impounding Basin.—The state board of health started a survery, April 1, of the proposed impounding basin of the Tallahassee Power Company, the so-called aluminum trust. Engineers of the board will cooperate with the health departments of Davidson and Rowan counties in collecting all data that might bear on the relation of the proposed dam to public health. Our correspondent writes that the dam will make the largest artificial lake in the world, having, when completed, a shore line of more than 325 miles.

Personal.—Dr. Daniel R. Bryson has been reelected president of the chamber of commerce of Bryson City.—— Dr. John W. MacConnell, Davidson, has been detailed as commanding officer of General Hospital no. 95, U. S. Army Reserve, located at Columbia.——Davidson College has conferred the degree of D.Sc. on Dr. Andrew J. Crowell of Charlotte, a member of the state board of health, and president of the Tri-State Medical Association (the Carolinas and Virginia).——The chamber of commerce of Charlotte has awarded a prize of $100 to Dr. Harvey P. Barret of that city, as being one of three citizens whose services to the city were outstanding during 1925.

OHIO

License Stolen.—The Ohio State Medical Board reports that the license of Dr. Michael Mitchell was recently stolen from his automobile near Utica, N. Y. Dr. Mitchell graduated from Western Reserve University Medical School in June, 1924, and was licensed to practice medicine and surgery in Ohio, July 8, 1924.

Society News.—Dr. Eugene F. McCampbell, dean, and professor of preventive medicine, Ohio State University College of Medicine, Columbus, addressed the Richmond County Medical Society, recently, on "The Postponement of Death."—— Judge E. L. Porterfield, federal prohibition administrator, twelfth district, addressed the Columbus Academy of Medicine, recently, on prohibition laws affecting physicians.——Dr. Thomas J. Kirwin, New York, addressed the Academy of Medicine of Toledo and Lucas County, March 5.——Dr. Edward J. McCormick, president of the Academy of Medicine of Toledo and Lucas County, addressed the Wood County Medical Society, February 18, on "Gallbladder Surgery."—Drs. Louis A. Levison, Rosco G. Leland and Charles R. King, all of Toledo, gave a symposium on periodic health examinations before the Hancock County Medical Society February 10, at Findlay.—— Dr. Carl Spohr, Ohio State University College of Medicine, Columbus, addressed the Clark County Medical Society at Springfield recently on "Blood Chemistry as an Aid in Diagnosis."—Dr. Floyd C. Hendrickson addressed the Stark County Medical Society at Canton, March 16, on "Studies in Abdominal Incisions."

OREGON

State Medical Election.—At the fifty-second annual meeting of the Oregon State Medical Society, Portland, April 1-3, Dr. Willis B. Morse, Salem, was elected president; Dr. Hugh S. Mount, Oregon City, president-elect; Drs. Leo B. Bouvy, La Grande, John W. Sifton, Hood River, and Alfred B. Peacock, Marshfield, vice presidents; Dr. John Earle Else, treasurer, and Dr. Frederick D. Stricker, Portland, secretary.

Juvenile Hospital.—The new juvenile hospital, which is being erected on the property of the Louise Home, east of Portland, under the auspices of the Pacific Protective Society, will open, June 1, with accommodations for fifty patients. There will be thirty single rooms; the last legislature appropriated $17,500; Multnomah County is to contribute $25,000, and the state outside the county is expected to raise $35,000.

Bridge Pays for Nurses' Home.—The county commissioners of Multonomah County recently received a check for more than $170,000 as a refund for money advanced by the county for constructing the interstate bridge between Oregon and Washington. The county commissioners are using the money to build the nurses' home on Marquam hill in Portland. Each person who crosses this bridge to the north helps to pay for the nurses' home.

PENNSYLVANIA

Mellon Lecture.—Dr. George N. Stewart, professor of experimental medicine, Western Reserve University School of Medicine, Cleveland, will deliver the Mellon Lecture of the Biological Society at the Carnegie Institute, Pittsburgh, April 30, on "Studies on the Adrenal Glands."

Expansion of Medical School.—The building program of the University of Pennsylvania comprises five units, one of which is the medical school. There has been set aside on the campus for the medical school the triangle formed by Hamilton Walk, on which the laboratories are now and at the apex of which is the zoology laboratory; another side of the triangle runs along Cleveland Avenue, and the other is a line running along the Philadelphia General Hospital. It will be necessary, eventually, to remove from this plot Botanical Hall and the gardens. The plan is to continue building medical laboratories along Hamilton Walk. Construction on the laboratory of anatomy and biochemistry, for which the General Education Board and the Rockefeller Foundation have given $500,000 and the university an equal amount, will begin soon; from time to time, other medical buildings will be erected in the remaining space within the triangle.

Philadelphia

Dinner to Dr. Stewart.—A testimonial dinner in honor of Dr. Francis E. Stewart was given, March 23, by the faculty of the Philadelphia College of Pharmacy and Science and other friends, in recognition of his long service in the advancement of ethics in connection with the manufacture and distribution of medicinal products. Professor Charles H. LaWall of the faculty was toastmaster.

Campaign for River Crest.—A city-wide organization of volunteer workers will start a campaign, April 20, for funds to erect a building for the care of eighty children predisposed to tuberculosis. River Crest Preventorium, which now cares for twenty-five children, will be expanded with the funds raised. There will be an extensive exhibit at the Sesqui-Centennial, this summer, showing the progress made in tuberculosis work; among other things, the work done at River Crest will be demonstrated; it is the only place of its kind in the state.

Research Fellowships Available.—The Henry Phipps Institute offers fellowships to qualified applicants who desire to work in experimental pathology and bacteriology with especial reference to tuberculosis. They are open to physicians and doctors of philosophy or science who have majored in some fundamental medical science. Fellowships are also

offered in clinical research. Fellows will receive from $1,500 to $2,500 in accordance with their experience. Applications should be sent to Dr. Eugene L. Opie, director of laboratories, Henry Phipps Institute, Seventh and Lombard streets, Philadelphia, with a brief statement of the applicant's education and experience in methods of research, and letters of reference.

Society News.—Dr. John A. McGlinn addressed the Obstetrical Society of Philadelphia, April 1, at the College of Physicians, on "The Failure of Radium in Non-Neoplastic Bleeding: Histologic Study of Removed Uteri."——Dr. Henry Leffman lectured at the Philadelphia College of Pharmacy and Science, April 1, on "The Wonders of the Microscope"; this was one of the popular science series of lectures for the public.——Dr. William H. Park, New York, addressed the College of Physicians, April 7, on "The Drive to Eliminate Diphtheria: The Use of Scarlet Fever Vaccine and Antitoxin."——Dr. Thomas Darlington, formerly health commissioner of New York City, spoke at the fifth annual meeting of the Philadelphia Heart Association, April 14, on "Preventing Heart Trouble."

TENNESSEE

Personal.—Dr. Samuel S. Moody, formerly of Louisville, Ky., has been made health officer of Weakey County.——Dr. Lemuel C. Cox has been appointed city health officer of Kingsport.——Dr. Cummings Harris, Memphis, for many years epidemiologist to the city board of health, has resigned, and Dr. Samuel L. Wadley has been appointed to that position.——Dr. William D. Haggard, Nashville, President of the American Medical Association, was guest of honor at a banquet of the Knox County Medical Society, Knoxville, March 30; Dr. Haggard gave an address on "Goiter Surgery."

Dr. Klotz Goes to Cornell.—Dr. Walter C. Klotz, medical director of the National Home for Disabled Volunteer Soldiers, Johnson City, has resigned, effective, May 10, to accept a position on the faculty of Cornell University Medical School, N. Y. Dr. David Townsend, associate medical director, will succeed Dr. Klotz, and Dr. Edward B. Frisbee, now chief of the tuberculosis unit of the Pacific branch of the National Soldiers' Home at Sautelle, Calif., will become associate medical director. The new medical director, Dr. Townsend, is a graduate of Harvard Medical School and has been on duty at the Johnson City sanatorium since October, 1920.

Health at Nashville.—Telegraphic reports to the U. S. Department of Commerce from sixty-nine cities with a total population of 29,000,000, for the week ending March 20, shows that the highest mortality rate (27.2) was for Nashville, and that the mortality for the group of cities as a whole was 18.4. The mortality rate for Nashville for the corresponding week last year was 11.5 and for the group of cities, 15. A similar report from the department of commerce for the week ending March 27 also indicates that the highest mortality rate (32.9) among this group of cities was in Nashville, while for the group as a whole it was 19.4; for the group for the corresponding week last year the mortality rate was 14.8, and for Nashville, 15.7.

TEXAS

State Board Appointments.—The governor has appointed Dr. Joseph R. Frobese, San Antonio, a member of the state board of health to succeed Dr. Murff F. Bledsoe, Port Arthur, resigned; Dr. Ralph Bailey, Gatesville, was appointed to the board to succeed the late Dr. Edward L. Rose, Palestine.

Department for Periodic Examinations.—Baylor University College of Medicine, Dallas, announces that it will establish a department of periodic health examinations in the outdoor dispensary of the university for the examinations of apparently well persons, and that only persons entitled to free service will be admitted for examination. Beginning with the 1926-1927 session, all students admitted to the medical school will be required to submit to a complete health examination when admitted and annually until graduation; they will be required also to be vaccinated against smallpox when admitted, and will be urged to submit to vaccination against typhoid fever. This work will be done under the direction of the department of bacteriology, hygiene and preventive medicine, and comprehensive records will be kept on forms similar to those recommended by the American Medical Association for health examinations. The department of bacteriology, hygiene and preventive medicine, in cooperation with the state health department, will offer a short, intensive course this summer, probably in June, in public health, for which no fees will be charged and no certificates granted. During the first two weeks in June, the college and hospital will again offer diagnostic clinics in medicine and surgery and the specialties, and all reputable physicians are eligible to attend. There will be no fees charged and no certificates granted.

WASHINGTON

Society News.—Dr. Einar Hoff, Seattle, addressed the Puget Sound Academy of Ophthalmology and Otolaryngology, recently, on "Hay-Fever Caused by Pollen."——Dr. Henry Odland addressed the Skagit County Medical Society, recently, on "Diseases of the Skin," and Dr. Raymond L. Jeffery, on "Fractures."

Personal.—Dr. Harry V. Wurdemann, Seattle, has been commissioned a colonel in the Medical Reserve Corps, U. S. Army.——Dr. Charles E. Taylor, Tacoma, has been appointed superintendent of the Western State Hospital at Fort Steilacoom, to succeed Dr. David Livingstone.——Dr. William R. Leverton has resigned from U. S. Veterans' Hospital no. 59, it is reported, to assume charge of the physiotherapy department of the Tacoma General Hospital.——Dr. Mitchell Laugworthy, Spokane, has been appointed surgeon in chief of the Shriners' Hospital for Crippled Children, to succeed Dr. Charles F. Eikenbary, who is now in charge of the Children's Orthopedic Hospital in Seattle.——Dr. Paul I. Carter, Tacoma, has been appointed chief medical officer of U. S. Veterans' Hospital no. 59.

GENERAL

Travelers Must Be Vaccinated.—An order was issued, March 27, by the U. S. Public Health Service, it is reported, requiring that all persons leaving the Pacific Coast for Alaska and Hawaii must be vaccinated against smallpox.

Oriental Journal of Diseases of Infants.—The first number of the new quarterly *Oriental Journal of Diseases of Infants* has been received. This new periodical is published by the Branch Office of the Oriental Medical Association, care of the Children's Clinic, Kyoto Imperial University, and is under the able editorship of Dr. T. Suzuki, who is assisted by a committee of specialists. The important and well illustrated articles appear in English, German and Japanese.

The Rights of Children.—Herbert Hoover, president of the American Health Association, in a letter urging the annual observance of May Day as child health day, said that the elemental rights of each child are:

> To be born well.
> To have a healthy childhood, and
> To reach maturity in the happiness that comes in its fulness only to those whose physical heritage has been safeguarded.
> With bodily health almost surely goes the natural selection of health associations, moral and spiritual as well as physical.
> Also with such health, and just as naturally, goes an aptitude to receive the right instruction easily; to be kind; to regard the rights of others; that is, to make good citizens.

Society News.—The American Association of Hospital Social Workers will hold its annual meeting at Cleveland, May 25-June 2, with headquarters at the Hotel Winton; information can be obtained from the secretary, Miss Lena R. Waters, 30 East Ontario Street, Chicago.——Among the speakers at the annual Conference of State and Provincial Health Authorities of North America, Atlantic City, May 21-22, will be Dr. Walter M. Dickie, California State Board of Health, "The Plague Situation in California"; Dr. Benjamin F. Royer, National Committee for the Prevention of Blindness, "The Need of Epidemiologic Research in Trachoma," and Dr. Samuel J. Crumbine, American Child Health Association, "A Summary of a Milk Survey in Twelve States."

High Cost of Nursing.—Two plans will be submitted as solutions of the high cost of nursing at the biennial convention of the National Nursing Organizations, Atlantic City, May 17-22. "Grouping nursing," which has already been introduced in some hospitals, provides one nurse to care for several patients. Thus, the patients are enabled to have the services of graduate nurses continuously at a moderate fee, and if not critically ill, have adequate attention; if critically ill, additional care is given; for example, a nurse cares for two patients in adjoining rooms with an intracommunicating passage way, and another nurse is on duty at night; a nurse on duty in a given suite remains indefinitely. By this plan, a nurse may not earn as much daily as a nurse on special duty, but she has steady employment and more time for recreation. "Hourly nursing" is for the care of patients outside the hospital. The nurse is engaged by the hour rather than by the day, and goes from patient to patient as the physician does. This plan is in practice in a number of cities by individual nurses, and in connection with the work of public health nursing organizations. It is said to give the patient graduate nursing at expense within his means, and

provides physicians with nurses for patients who do not require full-time nursing. "Hourly nursing" has been tried in connection with public health nursing organizations in Philadelphia, Milwaukee, Boston, Indianapolis, Omaha and other cities.

Foreign Physicians at Tuberculosis Meetings.—The biennial meeting of the International Union Against Tuberculosis will be held in Washington, D. C., September 30-October 2, and will be followed by the annual meeting of the National Tuberculosis Association which will also be held in Washington, October 4-7. The following foreign physicians have signified their intention of attending one or both of these meetings:

Prof. Vittorio Ascoli, Rome, Italy.
Dr. G. B. Roatta, Florence, Italy.
Prof. Gaetano Ronzoni, Milan, Italy.
Dr. Leon Bernard, Paris, France.
Dr. Jacques Parisot, Nancy, France.
Dr. Edouard Rist, Paris, France.
Col. S. Lyle Cummins, Cardiff, Wales.
Sir Robert W. Philip, Edinburgh, Scotland.
Prof. E. W. Archibald, Montreal, Canada.
Dr. Jabez H. Elliott, Toronto, Canada.
Dr. Charles D. Parfitt, Gravenhurst, Ontario, Canada.
Prof. Arthur Rousseau, Quebec, Canada.
Dr. David A. Stewart, Ninette, Manitoba, Canada.
Sir Henry Gauvain, London, England.
Dr. A. F. Miller, Kentville, Nova Scotia.
Prof. Francis Harbitz, Oslo, Norway.
Prof. Dr. Lydia Rabinowitsch-Kempner, Berlin, Germany.
Dr. Ernst Loewenstein, Vienna, Austria.
Dr. Fred. Neufeld, Berlin, Germany.
Dr. Ferdinand Sauerbruch, München, Germany.
Prof. Hugo Selter, Königsberg, Germany.
Dr. Jaquerod, Leysin, Switzerland.
Mlle. Helene Mugnier, Lyons, France.
Dr. A. Rollier, Leysin, Switzerland.
Dr. A. Stanley Griffith, London, England.
Dr. F. N. Kay Menzies, London, England.
Sir George Newman, London, England.
Prof. Friedrich Müller, Munich, Germany.

Reorganization of Indian Medical Service.—The U. S. Department of the Interior announces a reorganization of the Indian Medical Service. Public health service methods will be installed in the handling of all medical, dental, health, sanitation and hospital activities of the bureau, under physicians detailed by the U. S. Public Health Service. Dr. Marshall C. Guthrie, U. S. Public Health Service, has been appointed chief medical director of the reorganized Indian Medical Service. Dr. Guthrie has had a long experience in public health work. He was stationed in New Orleans in 1905 during the epidemic of yellow fever, and has held various responsible positions in the public health service. The new plan is to establish four districts, each having a medical director in charge. The first district, with headquarters at Cloquet, Minn., will include Michigan, Wisconsin, Minnesota, Iowa, North and South Dakota, in which there is an Indian population of 64,419, ten Indian schools, ten agency hospitals, four sanatoriums, twenty-six agencies and many mission schools. The second district, with headquarters at Pendleton, Ore., includes Montana, Idaho, Washington, Oregon, Utah, Wyoming and northern California, and has an Indian population of 51,492, four Indian schools, eight agency hospitals, two sanatoriums, twenty-one agencies and many mission schools. The third district, with headquarters at Phoenix, Ariz., includes New Mexico, Nevada, Colorado, Arizona and southern California, and has 68,542 Indians, eleven schools, fourteen agency hospitals, six sanatoriums, thirty-six agencies and many mission schools. The fourth district, with headquarters at Muskogee, Okla., will include Kansas, Nebraska, Mississippi, North Carolina and Oklahoma. It has an Indian population of 64,419, seven Indian schools, three agency hospitals, three sanatoriums, sixteen agencies and many mission schools.

CANADA

Society News.—Among the guests who will participate in the program at the annual meeting of the Ontario Medical Association in London, Ontario, will be Dr. George E. de Schweinitz, Philadelphia, a past president of the American Medical Association, and Dr. Foster Kennedy, New York, who will contribute to the symposium on headache; Dr. Thomas McCrae, Philadelphia, will discuss nontuberculous pulmonary affections, and Dr. Leonard G. Rowntree, Mayo Clinic, Rochester, Minn., "Problems Connected with the Liver."——The Academy of Medicine of Toronto gave a dinner, February 2, to Dr. Donald C. Balfour, Rochester, Minn., who addressed the academy on "Peptic Ulcer."

Personal.—The New Brunswick government has appointed Dr. Walter W. White, St. John, on the Council of the College of Physicians and Surgeons of New Brunswick.——Dr. Henry A. McFarlen has been appointed president of the public school board of Winnipeg.——Dr. Oskar Klotz, professor of pathology and bacteriology of the University of Toronto Faculty of Medicine, delivered the Gordon Bell Memorial Lecture, Winnipeg, Manitoba, April 9; Dr. Klotz sails, May 1, for Lagos, West Africa, where, at the request of the Rockefeller Foundation, he will investigate yellow fever for six months.——Dr. Charles S. Morton, Halifax, N. S., has been elected director of the Ontario Equitable Life and Accident Insurance Company.——Dr. Archibald W. Hunter has resigned as pathologist to the Vancouver General Hospital, Vancouver.

FOREIGN

Spain to Hospitalize Lepers.—The Spanish government began a systematic campaign, according to the New York *Times*, March 19, to place all lepers in hospitals for treatment. The government intends to open well equipped leper hospitals with especially trained staffs in Andalusia, Santiago and the Canary Islands. There is a large hospital now in Valencia given over to the care of lepers. There are only about a thousand known lepers in the country; many others, it is feared, have not been discovered.

Society News.—The National Association for the Prevention of Tuberculosis will hold its twelfth annual conference, July 1-3, at Glasgow, Scotland, which will be open to all persons interested in tuberculosis on the payment of a fee of one guinea. The subjects for discussion are "The Actual Place and Function of the Tuberculosis Dispensary in the Tuberculosis Scheme" and "Provision for the Care of Non-pulmonary Forms of Tuberculosis." There will be a reception at the Municipal Building, July 1, by the lord provost of Glasgow, who will formally open the conference in the morning.

Personal.—The Fossati prize of the Istituto lombardi di scienze et lettere has been awarded to Prof. G. Aiello, on the staff of the Milan clinic for occupational diseases, for his work on "The Vegetative System in Fatigue."——Dr. Schenk, Poliklinik, Marburg, is in charge of the Sportarzt-Lehrgang, a course of graduate training in the medical aspect of sports, which is to be held there May 25 to June 5 this year. Our German exchanges add that attendance at the course entitles to the specialist title of Sportarzt—sport doctor.——Böhm, Kraus, Pirquet and others have been appointed a committee to study and introduce the BCG vaccine—if approved—into Austria in prevention of tuberculosis. Experiments on animals are under way.——Drs. Vialard and Darleguy of the French navy were awarded the navy prize for their "Epidemiologic and Clinical Study of a Meningococcus Epidemic."——Dr. Goepfert, 58, rue du Faubourg St-Jean, Nancy, is in charge of the fund for a medal to be presented to Prof. P. Haushalter on his retirement.——The director of the Assistance publique at Paris has announced the receipt from G. Blumenthal, New York, of a check for $60,000 for a new pavilion for ear and throat diseases at the Enfants-Malades Hospital.——Drs. Bernard, Duren and Trolli are the representatives of Belgium in the committee on tropical diseases sent by the League of Nations to western Africa. The members are to assemble at Dakar and hold the final conference at Sierra-Leone.

CORRECTION

Leora a Masculine Name.—In a collection of items pertaining to women physicians taken from the *Quarterly Bulletin* of the Medical Women's National Association, the name of Dr. Leora G. Bowers, Dayton, Ohio, president-elect of the Ohio State Medical Association, was included by mistake among the women physicians (THE JOURNAL, April 3, p. 1081).

Government Services

General Ireland Reappointed Surgeon General

The President has reappointed Major-Gen. Merritte W. Ireland as surgeon general of the U. S. Army and the nomination was confirmed by the Senate, April 8. General Ireland entered the military service in 1891; he served in the Spanish-American War, in the Philippine Insurrection and was chief surgeon of the American Expeditionary Forces in France in the World War until October, 1918, when he was appointed surgeon general of the army. He was awarded the Distinguished Service Medal for his services in the World War.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 20, 1926.

Osteopathy on the Defensive

Mr. E. T. Pheils, who describes himself as "vice president, British Osteopathic Association, chairman, Legislative Committee" has made an attempt to reply to the criticisms of osteopathy by Dr. Graham Little and Lord Dawson. He says that much of their matter against osteopaths has been accumulated from the "die-hards" of the American Medical Association. The recent debate in the house of commons is, he says, practically the same as that which has taken place in various United States legislatures previous to legislative protection. Now this statement is quite inaccurate, for the criticisms of osteopathy in this country, excepting the quotation of the American Medical Association's classification of colleges, have been quite independent. If they happen to coincide with anything said in America, it is simply a corroboration. "Well selected commissions," we are told, "invariably have reported that the osteopathic colleges compare quite favorably with the orthodox medical colleges." Then an Edinburgh graduate, also "D.O." of Kirksville, Mo., who therefore knows something about osteopathic colleges, is quoted as saying: "It is of interest to compare the average number of school hours in the five leading medical colleges in America (Cornell, Harvard, Jefferson, Northwestern University and Washington University) with the average number of school hours in the five leading osteopathic colleges (Kirksville, Chicago, Des Moines, Los Angeles and Philadelphia). Taking the subjects of anatomy, physiology, chemistry, pathology, bacteriology, diagnosis, practice of medicine, surgery, physiotherapy and the leading clinical subjects, the average number of school hours in the five leading medical colleges of America is 4,542, and the average number of school hours in the five leading osteopathic colleges is 4,953." As if "hours" were everything and the nature of the instruction and the instructors were not the main point. Then we are told that the majority of the members of the "British Osteopathic Association" are British-born men and women who have been compelled to go to the United States to qualify as osteopaths. "Because of the difficulty of the minister of health in recognizing or exercising any control over foreign diplomas, the British Osteopathic Association is founding a college of osteopathy in London. The British Osteopathic Association, including several registered medical men and Sir Herbert Barker, is competent to regulate the standards of this institution." Incidentally, it may be pointed out that Sir Herbert Barker is simply a "bonesetter" who never had anything to do with osteopathy before the present agitation for government recognition began, and therefore is not a competent "regulator," supposing that any "regulation" is to be taken seriously.

Report on Cancer of the Breast

A further report on cancer of the breast is published by the ministry of health and is described in a prefatory note by Sir George Newman, chief medical officer of the ministry, as "a useful and permanent addition to our knowledge of an obscure subject." A previous report prepared, like the present one, under the direction of Dr. Janet E. Lane Claypon, dealt with the results obtained after operation, and it was decided to follow this up by an investigation into the antecedent histories of 500 women who either were or had been victims of the disease. The inquiry was carried out in London and Glasgow. The new volume shows that only 15 per cent of the patients in hospitals had offered themselves for treatment at a stage at which real hope of prolonged relief or a possible cure by surgical treatment could be considered likely. "It has long been known," the report points out, "that unmarried women suffer from cancer of the breast at a higher rate than married ones." It is now proved that among married women those who are less fertile are at a disadvantage. The common belief that lactation at repeated pregnancies is a cause is shown to be baseless. Finally, this inquiry has confirmed and placed on a basis of statistical measurement the connection between the occurrence of cancer of the breast and a previous injury.

New Regulations for Insuring Clean Milk

A set of important regulations for securing cleanliness in the handling of milk is contained in the milk and dairies order, 1926, which has been drafted by the minister of health and is due to come into operation, July 1. Provision is made for the registration of all dairies and dairymen, and the duty of inspecting cattle in dairies is laid on every county and borough council. The order insists that cowsheds shall be properly lighted and ventilated, that they shall be kept "sweet and clean," and that they shall be whitewashed in May and October every year. It forbids the depositing of milk in any room used as a kitchen, scullery, living room or sleeping room, or in any place where it is likely to become infected, and requires that every person dealing with milk shall keep his clothing and person in a cleanly condition. The dairyman is required to report to the health officer any person in his household or the household of his employees who is suffering from an infectious disease, and health officers are given authority, when the supply or part of the supply of the dairy is suspected of being infected, to prohibit the sale of such milk for limited periods. Cattle in dairies must be kept clean, and the udders must be cleansed regularly before milking is begun. Cans and receptacles other than bottles, delivered to a dairyman, must be thorougly cleansed by him before he returns them. The penalties for offenses, as fixed by the milk and dairies (consolidation) act of 1915, are fines not exceeding $25 for the first offense, and not exceeding $250 for subsequent offenses; and not exceeding $10 a day in the case of a continuing offense.

Inspection of Imports

Regulations which it is proposed shall come into force, Jan. 1, 1927, lay on sanitary authorities the duty of inspecting imported milk, and forbid any person to import milk unless he is registered by the sanitary authority into whose district the milk is imported. If milk fails to reach a certain standard of cleanliness, the importer may be removed from the register; but appeal from the decision of the sanitary authority is provided. These regulations do not apply to condensed or dried milk.

Collective Investigation of the Status Lymphaticus

The exact part, if any, which status lymphaticus plays in the causation of sudden death is the subject of investigation by the Medical Research Council and the Pathological Society of Great Britain and Ireland. They are collecting information on the weights and measurements of the thymus gland on a large scale. The objects of the investigation are: (1) to establish, by means of a large series of weights and measurements, the standards of weight for age, and the proportion to body weight of the normal thymus at all ages; (2) to investigate closely the precise cause of death in persons dying suddenly from unexplained and trivial causes, when the only apparent abnormality is the presence of a large thymus.

In order to promote these objects, a committee of experts has been formed. Part of the scheme evolved by this com-

mittee is the appointment of a number of investigators in large centers to collect detailed records. But, in addition, the committee earnestly invites all other pathologists and physicians who perform necropsies to cooperate. The cases in which information is especially desired are: (*a*) cases of sudden death in apparently healthy persons of any age, including deaths from accident; (*b*) all cases of death in persons of 15 years or over who have an apparently glandular thymus. For this purpose, record cards have been prepared and will be sent on application for them.

Heavy Mortality from Motor Vehicles

During the period 1904-1923, the cancer mortality rate in England and Wales increased approximately 50 per cent, and the mortality arising from accidents caused by mechanically propelled vehicles by more than 1,000 per cent. During the same period, the mortality rate from all causes diminished by over 11 per cent. These comparisons were drawn by Major P. G. Edge in a paper read before the Royal Statistical Society on "The Growth of Mortality Due to Motor Vehicles in England and Wales, 1904-1923." "Cancer mortality," he said, "is fairly continuously pressed on the attention of the nation, but another cause of increasing mortality passes, not indeed without comment, even indignant comment, but without continuous public attention. Yet the deaths arising from street accidents mount up year by year. Each year the traffic problem presents increasing difficulties to be overcome by local administrative authorities; the effects of the increasing congestion on our streets and roads is reflected in the official returns of deaths caused by motor and other road vehicles." In 1904, motor traffic caused 171 deaths; in 1923, it caused 2,414. In spite of the fact that the general mortality in London was more than 30 per cent lower in 1923 than in 1904, deaths caused by motor vehicles showed an increase approaching 3,000 per cent. But American experience is much worse than ours. Indeed, the increased mortality has not only been much more rapid in the United States, but has attained a level more than double that of England and Wales. Higher mortality is also shown by American cities when compared with English ones. To insure the safety of foot passengers, Major Edge recommends: (1) a change in the law to permit (or insist on) local authorities to establish examinations of all drivers regarding physical fitness, technical skill and driving capability, before the issue of a license to drive; (2) compulsory insurance of the vehicle against mechanical defect (and perhaps against third-party risks).

Arsenic on Apples

The contamination of American apples with arsenic has been reported in previous letters. In another case a London fruiterer was fined $50 with $15 costs for selling 2 pounds (0.9 Kg.) of imported apples which contained 1/32 grain of arsenic per pound. The proceedings were the result of a complaint that people were ill after eating some of the apples. The local health officer declared that the dry wiping of apples for the removal of arsenic was of no use. "I have tried many methods," he said, "and I am of opinion that washing the apple is better than peeling it. But I do think that once the arsenic is sprayed on you cannot remove the whole of it in any way."

Indian Government's Opium Policy

The government of India is taking steps to give effect to the large sacrifices of revenue entailed by the new policy of eventual extinction of exports of opium, except for strictly medical purposes. For a long time, policy has been directed to preventing the use of Indian opium in the illicit trade in drugs. In 1915 the system of selling direct to importing governments was established and has been increasingly followed. Since 1923, no exports have been allowed save on certificates of the governments of the importing countries. Last year even certificated exports to Persia and Macao were prohibited. The signatories of the second Geneva protocol are to take measures to prevent within five years such smuggling as would seriously hinder the suppression of the use of opium in the Far East. The government of India interpreted the spirit of this obligation in the widest sense, as applying not only to actual smuggling from India but also to possible subsequent movements of opium legally exported. Accordingly, last year the government declared its intention to prohibit or restrict export even where foreign governments furnished import certificates, if there was evidence that opium in such foreign countries was finding its way into illicit trade. The further big step now taken goes beyond any requirement of the second Geneva protocol. The government has come to the conclusion that to avoid placing invidious restrictions on particular countries, and to carry out the policy of prevention to the utmost limit, exports to all countries shall be annually reduced and ultimately extinguished within a definite period. The policy requires the endorsement of the Indian legislature, but in the light of discussions which have been held from time to time in both chambers there is no reason to anticipate that it will be withheld. India has thus taken the lead in initiating the measure for which the proctocols provide, and by going far beyond her obligations is showing a determination to do all in her power to secure the improvement in the world opium situation which was looked for as a result of the Geneva conference.

Precautions to Be Observed in the Administration of Morphine and Heroin

A committee on morphine and heroin addiction, appointed by the ministry of health in September, 1924, was asked to advise as to the circumstances in which the supply of morphine and heroin to persons suffering from addiction to those drugs may be regarded as medically advisable, and as to the precautions which it is desirable that physicians prescribing morphine or heroin should adopt for the avoidance of abuse, and to suggest any administrative measures that seem expedient for securing observances of such precautions. It consisted mainly of experts: Sir Humphry Rolleston (chairman), Sir William Willcox, Dr. J. W. Bone, Dr. R. W. Branthwaite, Dr. G. M. Cullen, Prof. W. E. Dixon and Dr. John Fawcett. The report, which has just appeared, is of considerable importance. It states that morphine or heroin may be administered to addicts (*a*) when patients are under treatment by the gradual withdrawal method with a view to cure; (*b*) when it has been demonstrated, after a prolonged attempt at cure, that the use of the drug cannot be safely discontinued entirely, on account of the severity of the withdrawal symptoms produced; (*c*) when it has been similarly demonstrated that the patient, while capable of leading a useful and relatively normal life when a certain minimum dose is regularly administered, becomes incapable of this when the drug is entirely discontinued. In these cases the primary object of the treatment is the cure of the addiction, if practicable. The best hope lies in treatment in a suitable institution or nursing home. If the patient is unable to adopt this course or refuses, the physician must attempt cure by steady, judicious reduction of the dose. The patient should be seen frequently, be under sufficient control, and be in the care of a capable and reliable nurse. The physician should endeavor to gain his patient's confidence, and to induce him to adhere strictly to the course of treatment prescribed, especially as regards the amount of the drug of addiction which is taken. This last condition is particularly difficult to secure, as such patients are unre-

liable and frequently endeavor to obtain supplementary supplies of the drug. If, however, the physician finds that he cannot maintain the necessary control of the patient, he must consider whether he can properly continue indefinitely to bear the sole responsibility for the treatment. When the physician finds that he has lost control, or when the course of the case forces him to doubt whether administration of the drug can, in the best interests of the patient, be completely discontinued, he must consider whether he ought to remain in charge of the case and accept the responsibility of supplying or ordering indefinitely the drug in the minimum doses which seem necessary. The responsibility of making such a decision is obviously onerous, and both on this ground and also for his own protection, in view of the possible inquiries by the home office which such continuous administration may occasion, the physician will be well advised to obtain a second opinion. Severity of withdrawal symptoms on complete discontinuance after prolonged attempted cure, and inability of the patient to lead, without a minimum dose, a relatively normal life may appear to justify continuous administration of the drug indefinitely. The main object then must be to keep the supply of the drug within the limits of what is strictly necessary. The physician must see the patient sufficiently often for such observation as is necessary to justify the treatment. The opinion expressed by witnesses was to the effect that such patients should ordinarily be seen not less frequently than once a week. The amount of the drug supplied or ordered on one occasion should not be more than is sufficient to last until the next time the patient is to be seen. A larger supply would be justified only in exceptional cases; for example, on a sea voyage, when the patient was going away in circumstances in which he would not be able to obtain medical advice. In all other cases he should be advised to place himself under the care of another physician, who should be informed as to the nature of the case and the treatment pursued. Where the patient is suffering from organic disease for the treatment of which the drugs are necessary, the matter may be considered under two aspects: (*a*) cases in which the administration of morphine or heroin may be necessary for an indefinite period and in which the probability of a cure of the disease is remote (e. g., inoperable cancer); (*b*) cases in which administration of the drugs is called for in order to deal with conditions which, though due to organic disease, may be expected to be of more or less temporary duration (renal or biliary colic, etc.). In class *a*, the possibility of establishing a craving cannot be allowed to influence the administration of such doses of the drugs as are considered necessary for the adequate treatment of the organic disease; it will be in those rare cases only in which there is some prospect of partial or complete recovery from the disease that any attention can properly be given, during the course of treatment, to such measures as are likely to mitigate or avert the risk of subsequent persistence of any craving which may have been produced. In respect of class *b*, these measures become of paramount importance. They consist mainly in substitution, when possible, of other drugs for morphine and heroin, in close supervision by the physician of the amounts used and of the frequency with which they are administered, and in withdrawal of the drug as soon as possible.

Claim for a Mosquito Bite Under Compensation Act

An unusual compensation action was heard at the Manchester county court. A widow applied under the workmen's compensation act with regard to the death of her husband, who had been employed as a donkeyman on board a ship. He was bitten by a mosquito when the vessel was at Ghent and died thirteen days later, when the vessel arrived in the Manchester ship canal, from septicemia and pyemia following cellulitis. The judge said that the ship was unloading 300 or 400 yards from marshy land, which was the breeding ground for mosquitoes. The lights of the ship were brighter than those on shore, and he was satisfied that there was a greater danger on board of being bitten than there was in the town, where certain preventive precautions were taken. The man had to attend to two furnaces and was bound to have an unshaded electric light in order to do his work. The heat and light of the boiler house attracted mosquitoes, while he had a smaller chance of avoiding their attacks than he would have had if he had not been at work. The judge held that the mosquito bite was an accident within the meaning of the compensation act and gave his award in favor of the applicant for $1,770 with costs.

PARIS

(From Our Regular Correspondent)

March 15, 1926.

Intracardiac Injection of Epinephrine in Apparent Death of New-Born

Reanimation of the heart by intracardiac injection of epinephrine is being more and more frequently reported by reason of the simplicity of the technic. Especially in syncope resulting from chloroform, the method has proved good. It was logical, therefore, to employ it in other cases of arrested heart beat. Garipuy and Mériel of Toulouse report a favorable result from intracardiac injection of epinephrine in a case of asphyxia in the new-born. In their case of an infant born apparently dead, without heart beats or pulsation of the umbilical cord, aspiration of mucus and artificial respiration had proved ineffectual. After five minutes an intracardiac injection of 1 cc. of a 1:1,000 solution of epinephrine was administered in the fifth left intercostal space midway between the median and the mammillary lines. Almost immediately the infant heaved a sigh and the heart began to beat. Artificial respiration was continued, and at the end of fifteen minutes normal respiration was established. The authors pointed out that, in infants, intracardiac injection is exceedingly simple. The lungs of the infant that has not yet breathed lie flat against the vertebral column. There is therefore no danger of injuring them in making a puncture between the median and the mammillary lines. After the lapse of from ten to fifteen minutes, all hope of resuscitation will be gone. Therefore, no time should be lost, and, when ordinary maneuvers have failed, intracardiac injection of epinephrine should be given without delay. It will have every chance of being effectual if it is done within five or six minutes after the arrest of the heart beat. After the injection, artificial respiration and rhythmic traction of the tongue should be kept up. The injection of epinephrine is not supposed to supplant, only to supplement, these methods.

Death of Professor Moussous

French medicine has lost one of its most eminent pediatricians in the person of Professor Moussous of the University of Bordeaux, who died recently. Professor Moussous was born in 1857. He began his medical studies in Bordeaux and completed his medical course in Paris, where he served as hospital intern from 1882 to 1886. He later became hospital physician, then agrégé professor, and, in 1898, head professor at the University of Bordeaux, where he devoted all his energy to pediatrics. He was eminent as a clinician and his publications are also of great value. Among his writings are a volume of clinical lectures on the diseases of children, a monograph on congenital affections of the heart, numerous articles in the handbook of children's diseases by Grancher and Comby, and several articles in the *Archives des maladies des enfants*, to which he was one of the oldest and most faithful contributors. In spite of his manifold duties, he always managed to find time for participation in movements looking toward the welfare and uplift of childhood.

Spirochetes in Relation to Pulmonary Gangrene

Bezançon and Etchegoin recently communicated to the Academy of Medicine the results of their microbiologic researches on pulmonary gangrene. They point out the rôle of spirochetes as well as that of nonsporulating anaerobes of the Veillon type, which Rist and Guillemot have shown to be of considerable importance. The existence of the spirochetes can be shown solely by the use of the following method: A specimen of sputum is shaken vigorously in a little physiologic sodium chloride solution and then placed in a water bath at a temperature of 29 C. for a quarter of an hour. The spirochetes are found on the surface of the liquid. Under these conditions, 285 tests were negative in various affections of the respiratory tract, but in seven cases out of eleven of pulmonary gangrene the authors found a peculiar spirochete which was quite different from the ordinary bacterial invaders of the mouth and which showed all the characteristics of the bronchial spirochete of Castellani. It was not *Spirochaeta vincenti,* and an attempt should not be made to attribute to fusospirillar symbiosis a rôle that has not been demonstrated. Various authors by their study of histobacteriologic preparations had shown that the central portion of the gangrenous foci contain Veillon anaerobes, *Bacillus fusiformis,* and certain rare spirochetes much altered, whereas the edges of the lesion revealed only an abundance of well preserved spirochetes. If one considers in this connection the extreme fragility of the spirochete, which is broken up in less than forty-five minutes in the sputum, one is led to believe that it plays a primary part in pulmonary gangrene when it is found to be present, and possibly also in the cases in which it has not been discovered in the sputum. It is the lung prepared by a spirochetal infection that is most likely to be attacked by anaerobes, the causative agents in putrid fermentation.

ITALY

(From Our Regular Correspondent)

Feb. 15, 1926.

The Italian Sanitary Mission in Yemen, Arabia

The governor of the Italian colony of Eritrea on the Red Sea, acting in accord with the central government at Rome, has complied with the request of the sultan of Yemen, in southwestern Arabia, to send him physicians, nurses and sanitary supplies. A mission has been dispatched to Sana, the capital of Yemen, where a hospital has been opened and is now in full operation. In spite of meager equipment and unfavorable surroundings, Drs. Mastrantonio and Pavone have performed numerous surgical operations. The purpose is to aid in the propagation of public health ideas and in the prophylaxis of infectious diseases.

Death of Prof. Camillo Golgi

Senator Camillo Golgi, the professor of general pathology, to whom we are indebted for the histology of the nervous system, has died at the age of 86. He discovered in 1874 his method of chrome-silver impregnation. Applying the method to the study of the brain and the spinal cord, Golgi was able to follow the ramifications of the processes of the nerve cells, to note the course of the individual fibers, to study the processes of the cells of the neuroglia, and to differentiate the two types of nerve cells (I and II) which are named after him Golgi's cells. He was one of the first to formulate the neuron theory. Also his studies on malaria led to many fundamental discoveries, such as the asexual cycle of the malarial parasite; the connection between sporulation of the parasite and the febrile attack, and the description, in addition to the evolutional forms, of the degenerative forms of the parasites. Golgi received, while still a young man, calls to other, larger institutions; but, having become well known for his researches at the University of Pavia, he never wanted to leave. He was a member of the Accademia dei lincei and of many other important Italian and foreign scientific academies. He had recently been the recipient of a Nobel prize.

The Academy of Italy

By a recent decree, the Accademia d'Italia has been created. The headquarters of the new society will be in Rome in a palace to be donated by the government. The object of the society is to promote and coordinate Italian intellectual movements in science, literature and art, preserving their pure national character and facjlitating their expansion in foreign lands. The membership will be limited to sixty appointed by royal decree and subject to the approval of the society. The king will appoint for the present only thirty charter members. The society will have no corresponding members, either Italian or foreign.

An Italian Precursor of Pasteur

At a conference held, February 2, at the Scuola di sanita militare, Senator Alessandro Lustig, professor of general pathology, Florence, depicted a great Italian scientist of the last century who has of late years been almost forgotten. The great scholar was Agostino Bassi, who, born near Lodi in 1773, was graduated in medicine by the University of Pavia. He is entitled to be called a precursor of Louis Pasteur. Studying a serious disease of the silkworm (*calcino,* so called), Bassi established the contagious nature of the malady and demonstrated that it is transmitted from diseased to healthy worms through inoculation with organic material; through contact with animals that have died from the disease, or through contaminated air. For all his assertions, Bassi furnished proof by means of entirely new and ingenious experiments. Also domestic animals, human hands, foods and insects (flies and fleas) were designated by Bassi as possible vehicles of the disease. Bassi declared that *calcino* was "caused and transmitted by a being endowed with organization and life." He established that the morbigenous agent grows only on silkworms. Bassi was the first to establish that prophylaxis of infectious diseases may be accomplished by means of disinfection, and as disinfectants he recommended the same agents that are used today (dry and moist heat, mineral acids, lime, soda and potassium). His work on *calcino,* the fruit of thirty years of study, was published, 1835-1839. Other important researches of Bassi were on the etiology and prophylaxis of pellagra, published in 1846. He attributed the disease from the start to the use of spoiled or fermented maize, and advanced the opinion that fermentation of the grain is due to organisms of a vegetable nature, as was later demonstrated by Pasteur. He recommended, therefore, inoculation with dried extracts of maize, in the prophylaxis of pellagra. In 1852, Bassi asserted that "all contagious diseases are produced by parasitic microorganisms, vegetable or animal." It is curious that it was in connection with the study of another infectious disease of the silkworm (*pebrina*) that Pasteur began, in 1863, his discoveries in relation to infections. In honor of Agostino Bassi, a national committee has recently been appointed which will republish the works of the scientist of Lodi.

Organization of the Aviation Sanitary Service

By a recent government decree, the details of the aviation sanitary service have been established. In the department of aeronautics (recently constituted), there will be a central bureau of sanitation, which will have under its control a central committee for the study of aviation with respect to sanitation, the medicolegal institutes, the regional sanitary bureaus, the infirmaries and the first-aid stations in the aeronautic camps, schools and societies.

BELGIUM

(From Our Regular Correspondent)

March 15, 1926.

Sterilization of the Unfit

The Société d'anthropologie of Brussels has taken up the question of sterilization of abnormal subjects, from the anthropologic point of view. There is at present evidence of an augmentation in the number and of a retrogradation in the character of the sexual misdemeanors committed. Vervaeck discussed all phases of the question and referred to the action that had been taken in foreign countries. In Scandinavia, laws have been passed prohibiting marriage in the presence of certain mental affections, such as constitutional epilepsy, leprosy and infectious venereal diseases. In such cases the physician is required to notify the authorities. However, serious difficulties lie in the way of prophylactic sterilization. The diagnosis of hereditary diseases and the prognosis of hereditary defects is difficult. Again, from the moral aspect, such a measure is repugnant to our feelings and sterilization would not be acceptable at all except with the consent of the subject or of his family. The author concludes that the crusade against degeneracy must never be cruel or unjust, or impose mutilations that may entail disagreeable consequences from the physical or mental standpoint; for the experiences collected thus far are by no means conclusive. To treat abnormal subjects, it is much better to combat degeneracy at its origin: alcoholism, syphilis, etc. Furthermore, the sterilization of abnormal subjects does not avert their social danger, and it will always be difficult to adopt a measure which presents so many obstacles of all kinds and which is so directly in conflict with our usual public policy and customs.

Cancer in Relation to Industrial Accidents

Before the Société belge de médecine et de chirurgie des accidents du travail, Dr. Brohée discussed recently the problem of the traumatic etiology of cancer, and, more particularly, of cancer of the stomach. Trauma does not provoke cancer directly. It is not the sole cause, but it is one of the causes. From the medicolegal point of view, certain cancers may be recognized as the result of industrial accidents. Legal responsibility must take account of these criteria: Traumatism may be considered the principal cause if the cancer develops not less than one month nor more than three years after the accident in question, or in case of an aggravation resulting in death in a shorter time than would otherwise have occurred. Traumatism may be considered as a partial cause if the cancer is slightly aggravated. Traumatism must be considered as of no influence if it merely leads to the discovery of a preexisting cancer without affecting its evolution. While a gastric cancer cannot be caused directly by traumatism, an ulcer that develops as the result of a traumatic lesion of the gastric mucosa may be considered as a traumatic ulcer. A cancer developing on the site of an injury might, through an inaccurate use of language, be termed a traumatic cancer of the stomach. In such a case it will always be difficult to furnish definite proof of what is the true condition, for the past history is not sufficient.

Intravenous Injections of Quinine

Addressing successively the Cercle médical of Léopoldville and the Société belge de médecine tropicale, Drs. Seidelin and Fidao entered a plea in favor of intravenous injections of quinine. Seidelin advocates concentrated solutions, and it is his experience that accidents are insignificant. He does not confine the method to emergency cases, for he holds that intravenous injections sometimes produce a more energetic action than buccal administration. The latter method will, however, remain the method of choice in daily practice. Fidao has found that doses of 0.5 Gm., if given intravenously, will have as much effect as doses of from 1.5 to 2 Gm. by mouth, for he does not believe in the more rapid elimination of the drug when given intravenously. He has examined urines voided every two hours after the intravenous injection of 0.5 Gm. of quinine in sixteen patients. When the patient has urinated a short time before the injection, one finds quinine in the urine during the first quarter of an hour. The maximal elimination takes place from the second to the fourth hour, but even fourteen hours later the reaction is still appreciable. Fidao affirms that, in grave cases, intravenous injection is the preferable method. In cases of moderate severity its efficacy is equal to that of buccal administration, but its use is restrained by the fear of local accidents. In chronic malaria, when, in spite of continued administration of quinine by mouth, the patient retains parasites and shows a bad general condition, four or five intravenous injections (say, 2 Gm. of quinine in four hours) will free the patient from parasites and will improve his general condition. In chronic cases, however, the objection to local reactions has more weight because they are more frequent than in acute cases, and then, again, the patients concerned are working regularly every day and are thus more discommoded by them.

Acidosis in Relation to Polycythemia

To the clinical society of the hospitals of Brussels, Dr. Schuermans presented recently a communication which appears to throw new light on the etiology of polycythemia, and especially of true erythremia or Vaquez' disease and of emphysematous and cardiac polycythemia.

The daily injection of heavy doses of sodium bicarbonate caused an almost 50 per cent decrease in the number of red corpuscles. The leukocyte count is not affected. The percentage of hemoglobin remains very high. However, the subjective symptoms improve. With the cessation of the ingestion of bicarbonate, the erythremia returns to its former status. The author endeavors to explain the therapeutic result by considering polycythemia as dependent on acidosis of the blood plasma. Sodium bicarbonate, by neutralizing the plasma, may cause the disappearance of the polycythemia.

New Findings in Epilepsy

Addressing the Société belge de biologie, Dr. Dautrebande presented the results of his researches on the acid-base equilibrium of the blood in epilepsy. He believes that there exists in epilepsy an abnormal product of metabolism of alkaline reaction which combines with difficulty in vivo with carbon dioxide.

Death of Professor Morelle

The death of Dr. Morelle, professor of dermatology at the University of Louvain, has been announced. Professor Morelle was called in 1919 to the medical faculty of the university to assume the chair of dermatology. Among his best known works are his treatises on face grafts, treatment of lupus and skin cancers.

Law Pertaining to Sugar and Saccharin

Belgium has a law for the protection of the sugar industry. The law forbids the importation, the manufacture, the transportation, the keeping on hand and the sale of saccharin and like products. Owing to that fact, no dentifrices that contain saccharin even in minute quantities may be imported into Belgium. Technicians find in saccharin a valuable anti-

septic in mouth hygiene. Several attempts have been made to induce the government so to change the interpretation of the law that tooth pastes, creams and lotions may be regarded as medical products, which would thus no longer come under the application of the law. Heretofore, dentifrices have been classed under the same head as perfumery.

Roentgenography of the Biliary Tract

The presentation of a number of cases of roentgenography of the gallbladder before the Société belge de radiologie has reawakened interest in questions of interpretation and of technic. In general, the authors would not accept the finding, which appeared to them too radical, that every gallbladder that does not become visible in the roentgenogram is in a pathologic condition. Tetrabromphenolphthalein appears more dangerous than tetraiodophenolphthalein, and intravenous injection (of the sodium salts) should usually be replaced by the ingestion of keratinized capsules.

GENEVA

(From Our Regular Correspondent)

March 25, 1926.

Two Cases of Insuloma

To date there have been reported thirteen cases of insuloma, or langerhansian adenoma. Dr. H. Schneider, working in the pathologic institute of the University of Lausanne, has recently published a thesis on two more cases, making fifteen in all. One of these was observed at Lausanne; the other is from the institute of pathology of the University of Geneva. These adenomas develop indifferently in the head, body or tail of the pancreas. Their diameter varies from a few millimeters to a few centimeters. One of the adenomas studied by Dr. Schneider is the largest recorded, and measured 5.5 by 4 cm. Of the fifteen recorded cases, all but two were found at necropsy of elderly subjects whose death was due, with one exception, to arteriosclerosis. One of Dr. Schneider's cases is the oldest so far reported, the subject being a man, aged 84. In this case a congenital origin of the tumor was suspected. Besides the pancreatic growth, there were adenomatous nuclei in the prostate and numerous cysts in the kidneys. Although the neoplastic nature of the latter is still a question, it is admitted that renal and hepatic cysts often encountered in the same subject develop from an embryonal disturbance. This subject, furthermore, presented a dermatomyoma of the right big toe.

To explain the genesis of pancreatic growths is difficult. The frequency of insular lesions in diabetes mellitus is nevertheless unquestioned. Schneider points out that it may be well to study the relations between insulomas and disturbances of sugar metabolism. In the fifteen cases so far recorded, two of the patients were diabetic. Schneider does not believe that these growths cause diabetes. It is to be hoped that in future instances of insuloma, detailed examination of the entire pancreas—especially by Heiberg's methods—will be undertaken to throw more light on this problem.

Two Cases of Cystic Disease of the Intestine

Dr. Albert Reverdin of Geneva has recently reported two cases of cystic disease of the intestine, a rare affection whose exact etiology is still unknown. The first case was diagnosed at laparotomy, and the specimens were examined immediately after removal. Microscopically, the cysts were of spherical lamellae bounded by fibro-adipose tissue and occasionally lined with a layer of flattened cells. The endothelium of the submucous lymphatic vessels, in which the gas was contained, showed inflammatory reaction. No bacteria were detected in the sections. By roentgen-ray examination, Reverdin diagnosed preoperatively the second case as cystic intestinal pneumatosis. The film revealed a clear area streaked by dark arches which did not resemble valves. The image was located on the right between the diaphragm and the liver, and on the left between the diaphragm and the gastric dome. Reverdin points out that some gastro-intestinal affection has coexisted in 75 per cent of the reported cases. The contents of the cysts are composed of gas containing 10 per cent of carbon dioxide and 90 per cent of nitrogen. Bacterial origin has as yet not been shown to exist.

Operative Mortality in Simple Hyperthyroidism

The operative mortality in simple goiter is now very low. De Quervain of Berne, in his recent statistics of 2,220 cases of simple goiter, found a mortality of 0.86 per cent. Of 1,682 patients under 40 years, de Quervain's mortality was 0.06 per cent, while of 316 operations on patients in the fifth decade there were three deaths, or about 1 per cent. In the sixth decade 145 patients gave a mortality (six cases) of 4.1 per cent, while in the seventh decade there were forty-six operations with seven deaths (nearly 20 per cent). In the eighth and ninth decades there were eight cases with two deaths, or 25 per cent. These figures show that the danger appears at the time of life when the cardiovascular and renal systems commence to show the changes of advancing life. It is then that operative shock and pulmonary postoperative complications—bronchitis and pneumonia—are fatal.

Subcutaneous Tumors from Injection of Drugs

Dr. J. L. Nicod of Lausanne has recorded two new cases of subcutaneous tumors, the result of subcutaneous injection of drugs. In one of these cases the nodules, which were multiple and of various sizes, were the result of injections of camphorated oil and quinine given eleven years previously. The second patient was a woman, aged 24, who eight months previously had been given injections of quinine in the buttocks. In both cases the process was a granuloma developing in the areas of the injections of quinine and camphorated oil given many years previously. The watery solution or oil injected at once produced a cyst which did not become absorbed and, acting like a foreign body, set up an inflammatory reaction around it. In view of the extensive use of camphorated oil injections, these morbid processes are rare. The cases so far reported have occurred in weak patients with some serious infective process and whose power of subcutaneous absorption has been injured, perhaps by lesions of the terminal vascular branches. In such patients, Nicod advises the venous route.

New Gastrostomy Technic

In the operation of gastrostomy, Dr. Cornioley of Geneva makes a rectangular cutaneous epigastric flap with the pedicle above. The long axis of the flap runs from right superior to left inferior and measures from 6 to 8 cm., the breadth at the pedicle being 4 cm. and at the free border, 5 cm. The epidermis is next removed with a sharp curet over an area of 15 cm., completely exposing the dermis. The flap is then rolled up into a tube, and the edges are sutured together. The abdominal cavity is opened through the left rectus muscle. A cone of the gastric wall is drawn out through the opening in the muscle and sutured to the parietal peritoneum. The apex of the gastric cone is then cut off to make a circular opening in the stomach. With four V-shaped silk sutures, the gastric cone is drawn into the lower portion of the cutaneous tube, sutured in place, and approximation is completed by a circular suture uniting the cutaneous tube and stomach. A few catgut sutures close the opening in the rectus muscle, and the entire field of operation is then covered over by autoplasty with two cutaneous flaps. The sound is left in situ for a fortnight, after which it is introduced only for feeding.

BERLIN

(From Our Regular Correspondent)

March 6, 1926.

The Hygienic Aspects of Sleep

In an article in the *Deutsche medizinische Wochenschrift*, Prof. I. H. Schultz, psychotherapeutist of Berlin, discusses psychotherapy in insomnia. The physician must get the hypochondriac patient to realize that he does not spend "absolutely sleepless nights." Then, again, the patient must be taught that it is possible to learn to sleep. He must be impressed with the idea that the length of hours is not so important as the quality of the sleep; furthermore, he should know that loss of sleep can be compensated for by increased food intake and other measures. The patient must be urged to spend the evening in such a manner that he will be in a calm state of mind on retiring. One should accustom oneself to noises so as to be able to fall asleep, and to continue to sleep, in spite of them. According to Schultz, hypnotism should be resorted to only in very severe cases of insomnia, but then the results are good.

Dress as an Expression of Sexual Feeling

In a lecture with lantern slides, recently delivered by Dr. Magnus-Hirschfeld, the well known investigator on sexual subjects, in the Institut für Sexualwissenschaften, he took as his theme the old controversial question, "Why Do We Wear Clothes?" He discussed the various theories that have been presented—"for protection," "to cover our nakedness," "as adornments to our person," "for purposes of allurement"—and then gave his conviction that the habit of dress sprang from an instinctive desire to express sexual aptitudes. Possibly we wear clothes at all because we need protection, while the kind of clothes we wear is decided by our instinctive impulses; especially, the desire for erotic allurement. In other words, *"Wir ziehen uns an, um andere anzuziehen,"* which may be freely rendered: We dress according to fashion, to fashion others' desires. Hirschfeld remarked that persons who had an antipathy for fancy costumes were suffering from blocked expression of instinctive impulses. Others, however, find satisfaction in hiding their ages at masquerade balls, or their stations at dances in the servants' quarters, or in forgetting for the moment that they belong to a certain historical period by donning the costume of a previous age. Those who are not satisfied unless they can wear the clothes of the opposite sex, often, while not homosexual, find in this disguise satisfaction of their instinctive impulses. Hirschfeld thinks that the present coiffure of women is controlled by such factors or impulses. The masculinization process, which is going on in women, had as its first expression bobbed hair. A photograph dating back twenty years and representing a female figure with bobbed hair, standing collar and black divided skirt at that time looked ridiculous, but now we inspect it quite unmoved. However, we must not forget that styles have only a relative significance. In this connection, the speaker conjured up the picture of a German bridal couple around 1500. The young man has long, flowing hair, an overgarment cut low in the neck, and coquettish puffed sleeves, while the bride has short locks and wears a simple, tight-fitting dress. So marked are the changing conceptions as to what constitutes "masculine" and "feminine" in dress. Nevertheless, Dr. Hirschfeld prophesied that the "boyish bob" was likely to persist for some time. It is in keeping with the demands of the time, which have likewise caused the Chinese to sacrifice their queues, and men, for the most part, their full beards.

Extreme types of transvestites endeavor to transform their bodies to make them resemble more the opposite sex: "Hapless creatures whose souls have been condemned by fate to spend their earthly days in cells their tastes berate." The presentation before the assemblage of a genuine transvestite was the climax of the lecture; a man who insists on comporting himself like a woman, calls himself "Dora," and even in his gait and his speech betrays almost superfeminine coquetry. The psyche of these mysterious persons is exceedingly puzzling. For instance, the mere recollection of the period in "Dora's" life in which the male characters were dominant brings a blush to "her" face.

Marriages

ERASMUS H. EVANS TAYLOR, Morganton, N. C., to Miss Julia Barber of New York, March 23.

ABRAHAM ANTWEIL, Fort Worth, Texas, to Miss Frieda Belle Maier of Lockhart, February 7.

WILLIAM B. CLENDENNING to Miss Anna Marie Schellhase, both of Waynesburg, Pa., March 31.

Deaths

Edward Aloysius Weiss ✠ Pittsburgh; University of Pittsburgh School of Medicine, 1900; assistant professor of gynecology at his alma mater; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons and the Associated Anesthetists of the United States and Canada; on the staffs of the Roselia Maternity, Magee, Presbyterian and Mercy hospitals and chief of staff of St. Paul's Roman Catholic Orphan Asylum; served during the World War; aged 48; died, March 24, at Honolulu, Hawaii, following an infection of the hand, contracted while performing an operation.

John Michael Stadter, Wilmington, Del.; Atlantic Medical College, Baltimore, 1908; member of the Medical Society of Delaware; on the staffs of the Physicians' and Surgeons' and the Delaware hospitals, and formerly on the staff of the Wycoff Heights Hospital, Brooklyn, aged 42; died recently, of influenza.

Arthur Sherwood Corwin ✠ Rye, N. Y.; Medical Department of the University of the City of New York, 1898; past president of the Westmoreland County Medical Society; on the staffs of the Grasslands Hospital, Valhalla, and the United Hospital, Portchester; aged 54; died, March 24, of pneumonia.

George Lewis Collins, Providence, R. I.; Medical School of Harvard University, Boston, 1879; member of the Rhode Island Medical Society; formerly on the staffs of the Rhode Island, Providence Lying-In and St. Joseph's hospitals; aged 74; died, April 1, of angina pectoris.

Charles Franklin Loeding, Portland, Ore.; University of Oregon Medical School, Portland, 1912; member of the Oregon State Medical Society; aged 43; died, March 21, at the Portland Sanitarium, of injuries received when a tractor toppled over on him.

Joseph C. Lincoln, Bowling Green, Ohio; Rush Medical College, Chicago, 1871; Civil War veteran; formerly probate judge; at one time a druggist, member of the board of education, and councilman; aged 81; died, March 24, of injuries received in a fall.

Theodore Louis Pulvermacher, Brooklyn; New York Homeopathic Medical College and Flower Hospital, New York, 1915; served during the World War; aged 46; died, March 22, of pleurisy following an infection acquired while operating.

Henry Martyn Hall, Jr., Pittsburgh; Medical Department of the University of Illinois, Chicago, 1897; member of the Medical Society of the State of Pennsylvania; aged 44; died, January 11, of acute dilatation of the heart and chronic myocarditis.

Albert E. Griffin, Columbus, Ohio; Columbus Medical College, 1884; formerly president of the city council, and member of the board of education; for five years on the staff of the Franklin County Infirmary; aged 72; died, March 28, of heart disease.

John C. White, Seatonville, Ill.; M.R.C.S. and L.R.C.P., England, 1867, L.R.C.P., Edinburgh, and L.S.A., London, 1868; for many years postmaster of Seatonville; aged 79; died, March 22, at Decatur, of pneumonia following erysipelas.

Joseph Allen Mansfield Clark ✠ Savona, Ohio; Michigan College of Medicine and Surgery, Detroit, 1898; past president of the Darke County Medical Society; aged 51; died, March 26, of tuberculosis of the spine.

John Henry Fochtman ✠ Cozad, Neb.; College of Physicians and Surgeons, Baltimore, 1883; past president and secretary of the Dawson County Medical Society; aged 63; died, March 13, of heart disease.

Harry Fred Bushey, Camden, N. J.; Baltimore University School of Medicine, 1904; formerly county coroner and member of the board of health; aged 47; died, March 26, following a long illness.

Herschel Eugene Currey, Baker, Ore.; Kentucky School of Medicine, Louisville, 1893; California Eclectic Medical College, Los Angeles, 1897; aged 65; was accidentally shot and killed, March 21.

Herbert Spencer Gillette ✠ Savona, N. Y.; Long Island College Hospital, Brooklyn, 1887; past president of the Steuben County Medical Society; aged 63; died, March 23, of heart disease.

Francis Irwin Burnell, South Norwalk, Conn.; Long Island College Hospital, Brooklyn, 1894; member of the Connecticut State Medical Society; formerly mayor of Norwalk; aged 64; died, March 18.

William Calvin Jarnagin, Atlanta, Ga.; University of Virginia Department of Medicine, Charlottesville, 1872; for five years president of the city board of health; aged 75; died, March 30.

Miloslav Francisci, Cleveland (licensed, Ohio, 1896); member of the Ohio State Medical Association; aged 71; died, January 19, of chronic endocarditis, diabetes mellitus and nephritis.

John H. Rohr, North Milwaukee, Wis.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1897; member of the State Medical Society of Wisconsin; aged 56; died, March 9.

Ralph Steans ✠ Lewisburg, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1891; aged 62; died, March 20, at the Williamsport (Pa.) Hospital, of heart disease.

Frank Robert Humphreys, Bradford, Pa.; College of Physicians and Surgeons, Baltimore, 1895; served during the World War; aged 54; died, February 27, following a long illness.

John Joseph Burke ✠ Schenectady, N. Y.; University of Vermont College of Medicine, Burlington, 1907; served during the World War; aged 49; died, March 11, of pernicious anemia.

Minor Morris ✠ Alliance, Neb.; Medical College of Ohio, Cincinnati, 1890; served during the World War; aged 62; died, March 22, at St. Joseph's Hospital, of arteriosclerosis.

John McWilliam, London, Ont., Canada; Trinity Medical College, Toronto, 1880; L.R.C.S. and L.R.C.P., Edinburgh, Scotland, 1880; aged 72; died, February 10, of heart disease.

James Harwood Closson, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1886; formerly on the staff of St. Luke's Hospital; aged 63; died, March 26.

Ebenezer Lee Palmer, Noble, Ill.; Eclectic Medical Institute, Cincinnati, 1877; also a druggist; aged 71; died, March 23, at the Olney (Ill.) Sanitarium, of diabetes.

C. E. Vandiver, Ogallala, Neb.; Ensworth Medical College, St. Joseph, Mo., 1887; member of the Nebraska State Medical Association; aged 64; died, March 26, of heart disease.

James Starrett Dougal, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1893; aged 55; died, March 21, at the Jewish Hospital, of pneumonia.

Frank Herbert Tilton, Boston; University of Vermont College of Medicine, Burlington, 1879; member of the Massachusetts Medical Society; aged 69; died, March 24.

Cornelius M. England, Carthage, Mo.; Eclectic Medical Institute, Cincinnati, 1875; also a minister; Spanish-American War veteran; aged 84; died, March 23, of senility.

George Augustus Stickney ✠ Beverly, Mass.; Medical School of Harvard University, Boston, 1882; on the staff of the Beverly Hospital; aged 68; died, March 22.

Jesse York Fitzgerald, Indian Trail, N. C.; Jefferson Medical College of Philadelphia, 1889; aged 58; died, March 12, of pneumonia.

Samuel H. Martin, Frankfort, Ky.; Medico-Chirurgical College of Philadelphia, 1905; aged 45; died, March 23, of heart disease.

Preston A. Peak, Greenville, Texas; Missouri Medical College, St. Louis, 1887; aged 63; died, March 10, following a long illness.

William John Boynton, Sutton West, Ont., Canada; Trinity Medical College, Toronto, 1900; aged 52; died, February 6, at Chatham.

William H. Kiester, Dayton, Ohio; Medical College of Ohio, Cincinnati, 1889; aged 69; died, March 16, of cerebral hemorrhage.

Charles F. Fickling ✠ Butler, Ga.; Southern Medical College, Atlanta, 1893; aged 55; died, March 16, of cerebral hemorrhage.

John Henry Hannahan, Needham, Ind.; Kentucky School of Medicine, Louisville, 1893; aged 62; died, March 22, of pneumonia.

Charles Allen Martin, Manhattan, Kan.; Detroit Homeopathic College, 1902; aged 51; died, March 18, of bronchopneumonia.

Zacharach Bailey Ogden, Pittsburgh; University of Pittsburgh School of Medicine, Pittsburgh, 1896; aged 56; died, March 8.

James P. Davis, Gary, Texas (licensed, Texas, under the Act of 1907); aged 71; died, March 16, at Nacogdoches, of pneumonia.

George Snow Isham ✠ Chicago; Chicago Medical College, 1884; aged 66; died, March 26, at Pinehurst, N. C., of pneumonia.

Burton Van Zandt ✠ Schenectady, N. Y.; Albany Medical College, New York, 1896; aged 55; died, March 20, of myocarditis.

James W. Hardy, Winterville, Miss.; University of Tennessee College of Medicine, Memphis, 1886; aged 74; died, March 20.

Charles Rudolph Paradis, Regina, Sask., Canada; Laval University Faculty of Medicine, Quebec, Que., 1910; died, January 6.

Richard Hearn, Toronto, Ont., Canada; Victoria University Medical Department, Toronto, 1883; aged 63; died, February 27.

John William Moore, Brooklyn; Long Island College Hospital, Brooklyn, 1892; aged 61; died, March 15, at Jamaica, N. Y.

William Edwin Burton, Baltimore; Baltimore Medical College, 1897; aged 63; died, March 28, following a long illness.

Lemuel Edwin Guion, Waxhaw, N. C.; North Carolina Medical College, Charlotte, 1907; aged 43; died, February 27.

James G. Pope, Coleman, Texas; Vanderbilt University Medical Department, Nashville, 1898; aged 56; died in March.

John Henry Stork, Huntingburg, Ind.; Kentucky School of Medicine, Louisville, 1888; aged 67; died suddenly, March 12.

Lewis Hamilton Evans, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1868; died, February 1.

Edwin M. Hunt, Cincinnati; Pulte Medical College, Cincinnati, 1876; aged 72; died, March 12, of heart disease.

Paul Riche ✠ New York; Long Island College Hospital, Brooklyn, 1907; aged 49; died, March 23, of myocarditis.

Albert C. Vose, Marion, Mass.; Pulte Medical College, Cincinnati, 1893; aged 72; died, March 24, of diabetes.

Nelson Frank Wetmore, Tacoma Park, Md.; Eclectic Medical Institute, Cincinnati, 1876; aged 73; died, March 15.

Louis T. Boatwright, Dowling Park, Fla.; Southern Medical College, Atlanta, 1880; aged 70; died, March 19.

John Tait, Washington, D. C.; Metropolitan Medical College, New York, 1854; aged 98; died, February 24.

George Earl McCorkle, Keysville, Va.; Rush Medical College, Chicago, 1888; aged 67; died, February 21.

Allan Noxon, Toronto, Ont., Canada; Hahnemann Medical College of Philadelphia, 1869; died, January 24.

E. D. Grigg, Verona, Mo. (licensed, Missouri, 1884); Confederate veteran; aged 88; died, March 14.

John H. Groff, Indianapolis; Medical College of Indiana, Indianapolis, 1892; aged 71; died, March 7.

Thomas J. Rich, Anna, Ill.; Miami Medical College, Cincinnati, 1872; aged 80; died, March 17.

Charles H. Mead, Battle Creek, Mich. (licensed, Michigan, 1900); aged 77; died, March 23.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

IDOZAN NOT ACCEPTABLE FOR NEW AND NONOFFICIAL REMEDIES

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report. W. A. PUCKNER, Secretary.

Idozan is an iron preparation manufactured in Denmark. According to the information furnished the Council by the distributor, Duomares Corporation, New York, the active medicinal ingredient of Idozan is "colloidal iron." According to the label, Idozan is composed of:

"Iron 5 per cent; pure alcohol 6 per cent; sugar 10 per cent; flavoring 1 per cent; water 78 per cent."

Although this quantitative statement of composition would seem to require that the iron must be present in the metallic state, the advertising offers the information that in Idozan "the iron is in the form of the colloidal iron hydroxide as well as some crystalloidal iron salts."

Idozan, it is explained in the advertising, was produced to make possible the administration of large doses of iron recommended by some clinicians. It is stated: "In order to meet the requirements of modern therapeutics in this respect, experiments were carried out by eminent Danish investigators . . ." and that "by a special method of manufacture a solution was produced . . . ," namely, Idozan.

While these statements suggest that Idozan presents something new, the statement that it contains "colloidal iron hydroxide, as well as some crystalloidal iron salts" and the general behavior of the preparation would seem to indicate that it is essentially similar to the colloidal ferric hydroxide preparation which was in vogue as "dialyzed iron" in this country many years ago and which is described in the fifth (1910) edition of the German Pharmacopeia as Liquor Ferri oxychlorati dialysati.

The Council finds Idozan unacceptable for New and Nonofficial Remedies because the statement of its composition is indefinite and incorrect and because it is an unoriginal preparation marketed under a noninforming name.

BENZYL BENZOATE FOR THERAPEUTIC USE-VAN DYK AND CO., TWENTY PER CENT. AROMATIZED SUSPENSION MADE FROM BENZYL BENZOATE (VAN DYK AND CO.) (UNITED SYNTHETIC CHEMICAL CORP.), AND BENZYL ALCOHOL-VAN DYK & CO. OMITTED FROM N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report. W. A. PUCKNER, Secretary.

The Synthetic Drug Corporation (formerly the United Synthetic Chemical Corp.), New York, markets a brand of benzyl benzoate-"Benzyl Benzoate for Therapeutic Use (Van Dyk & Co.)" and a preparation of it—"Twenty Per Cent. Aromatized Suspension made from Benzyl Benzoate (Van Dyk & Co.)." The advertising for these preparations is based on the enthusiastic reports which were published when benzyl esters were first used experimentally in medicine and recommends the use of the firm's preparations in "Biliary Colic," "Ureteral or Renal Colic," "Hypertension," "(Asthma)," 'Mucous Colitis—Biliary Colic in these conditions it has been found to be equally as efficacious as opium," "Renal Colic; Enuresis when due to hyperirritable bladder and sphincter," "Asthma (True Bronchial Spasm) all data concerning the Benzyl therapy of asthma seems to show that Benzyl Benzoate is an invaluable drug in the treatment of asthma," "Arteriosclerosis."

In 1924 the Council reported (THE JOURNAL, Dec. 6, 1924, p. 1864) that extensive clinical use of benzyl esters does not seem to confirm the enthusiastic estimate of their early advocates and that the indications are that they will prove only of limited usefulness. An inquiry addressed to a number of clinicians disclosed an almost unanimous opinion against the value of these esters so far as most of the recommended uses were concerned. The benzyl esters apparently give relief in a certain proportion of cases of dysmenorrhea; a small percentage of angina and of intestinal colic appear to be benefited by their use. They have been found without effect in hypertension and they are probably without effect in asthma, or renal or biliary colic.

In consideration of the revised estimate of the therapeutic usefulness of benzyl esters, the Council urged the Synthetic Drug Corporation to undertake a revision of its advertising. This revision was not made. The Council therefore directed the omission of "Benzyl Benzoate for Therapeutic Use (Van Dyk & Co.)" and "Twenty Per Cent. Aromatized Suspension made from Benzyl Benzoate (Van Dyk & Co.) (United Synthetic Chemical Corp.)" from New and Nonofficial Remedies.

Benzyl Alcohol (Van Dyk & Co.) was accepted in 1919 as a brand of benzyl alcohol, N. N. R. Recently the distributors —Synthetic Drug Corporation—have adopted the name "Benzylol" for it and claim this name as a "word mark."

According to the label "Benzylol (Van Dyk & Co.)" was "accepted by the Council Pharm. and Chem. for N. N. R., 1919."

This is misleading. Neither Van Dyk & Co. nor the Synthetic Drug Corporation are the discoverers of benzyl alcohol and therefore the Council cannot recognize an exclusive name applied to the product by these firms.

The Council omitted Benzyl Alcohol (Van Dyk & Co.) from New and Nonofficial Remedies because it is no longer marketed under this name. It held "Benzylol" unacceptable because it is not in the interest of rational therapy that the well known substance benzyl alcohol be marketed under proprietary names.

BISMUTHAL OMITTED FROM N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report. W. A. PUCKNER, Secretary.

Bismuthal is a mixture containing an insoluble bismuth citrate and pepsin as its active ingredients, with hydrochloric acid and lactic acid to protect the pepsin, and flavoring ingredients. It was formerly marketed by the National Pharmacy Company, Oakland, Calif., and is now owned by Langley & Michaels Company, San Francisco.

Bismuthal was accepted in 1909. At that time an extended clinical practice of prescribing mixtures containing a bismuth preparation and pepsin appeared to the Council to justify its acceptance.

During recent years the prescribing of pepsin in combination with other therapeutic agents has been generally abandoned by physicians. This change is forcibly brought out in the report of W. A. Bastedo on "The Use and Utility of Digestive Enzymes in Therapeutics" (THE JOURNAL, Sept. 5, 1925, p. 743).

The Council directed the omission of Bismuthal from New and Nonofficial Remedies on the ground that the routine combination of a bismuth compound and pepsin in the form of a stock preparation is unscientific and not in the interest of rational therapy.

Tularemia with Conjunctivitis.—H. L. Freese, G. C. Lake and Edward Francis report four cases of tularemia with conjunctivitis, three with fatal termination, occurring in a family of eight persons in Lee County, Va., in 1925. Rabbits were often eaten by all members of the family except the mother, and that they were dressed by the mother or her husband. Apparently authentic information was obtained that a typical epidemic among rabbits had occurred in the locality in May, 1925. Although the bacillus of tularemia is readily killed in ten minutes at from 56 to 58 C., cooking experiments performed by the authors demonstrated the fact that an infected rabbit which has been insufficiently cooked would be dangerous as food.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

ANAPHYLACTIC REACTIONS FOLLOWING TOXIN-ANTITOXIN INJECTIONS

To the Editor:—Have you any information on anaphylactic reactions following the administration of serums to children previously immunized against diphtheria with toxin-antitoxin? The planning of an immunization campaign in Ironwood has been interrupted by unfavorable reports coming from Minneapolis (Dr. Stewart's article, THE JOURNAL, January 9) and from Grand Rapids, Mich. Will you kindly give me your opinion and what information you have on the subject?

LOUIS DORPAT, M.D., Ironwood, Mich.

ANSWER.—S. B. Hooker (Human Hypersensitiveness Induced by Very Small Amounts of Horse Serum, *J. Immunol.* **9**:7 [Jan.] 1924) found that after toxin-antitoxin injections a noteworthy proportion of the persons became sensitive to horse serum when tested by specific intradermal reactions. William H. Park confirmed Hooker's results in general, but did not find any occasion from his experience in New York City to fear that the sensitizing effects of the toxin-antitoxin injections would lead to any serious results on subcutaneous or intramuscular injections of antidiphtheria serum later in persons free from evidences of status lymphaticus or horse asthma (*J. Immunol.* **9**:17 [Jan.] 1924). Dr. Stewart's recent report of anaphylactic reactions on injection of serum in seven children previously immunized against diphtheria by means of toxin-antitoxin indicates on the face of it that in certain cases sensitization may result from the toxin-antitoxin injections, but the possibility should be noted that for all we know severe reactions might have resulted in some at least of Stewart's cases, even if toxin-antitoxin had not been injected. In his report, Stewart does not say whether any of his seven patients were subject to horse asthma. In any case, there can be no question but that immunization against diphtheria without the introduction at the same time of foreign animal protein would be an advance of great advantage.

The letter of Dr. Dorpat, together with the reply, were submitted to Dr. W. H. Park of New York, who adds:

Dr. Stewart's recent report of anaphylactic reactions on injection of serum in seven children previously immunized against diphtheria by means of toxin-antitoxin stimulated me to make a comparative test of children who had and had not received toxin-antitoxin. The first test was in a group of seventy children, twenty-five of whom had had toxin-antitoxin and forty-five had received no toxin-antitoxin. They had been thoroughly exposed to scarlet fever and were given 10 cc. of antiscarlatinal serum. Within twenty-four hours some of the children began to develop higher temperatures and severe rashes, and within forty-eight hours twenty of the children were sick enough to remain in bed; some of the temperatures were as high as 104. The rashes were giant urticarial or scarlatinal in type, or the two types occurred in the same child. When the cases were compared as to the reaction in those who had and had not received toxin-antitoxin, there was no appreciable difference between them. (Dr. Park does not state whether serums were crude or concentrated—an important factor.—ED.)

As a further test I injected fifteen healthy children with 5,000 units of diphtheria antitoxin who had never received toxin-antitoxin injections, and fifteen healthy children with the same amount of diphtheria antitoxin who had had toxin-antitoxin injections. In none of these cases did any appreciable disturbance result, and there was practically no difference in the percentage of reactions in the two groups. It seems to me, therefore, that the reactions in the cases described by Dr. Stewart were not due to the fact the children had had toxin-antitoxin but rather to the fact that the antiscarlatinal serum is more apt to create disturbance than the diphtheria antitoxin. The reactions as described are not those of anaphylaxis but rather of serum sickness.

The question is now being studied in a number of laboratories as to the substitution of diphtheria toxoid for toxin-antitoxin. The toxoid is being used in Canada, in France and in Austria, while toxin-antitoxin or toxoid antitoxin is being used in the United States and in England. It is my belief that in a short time the diphtheria toxoid will be equally well standardized with toxin-antitoxin and that it will replace it, but there is no reason to hurry this change. It is better to use the toxin-antitoxin in the United States until the toxoid has been thoroughly proved and perfected, and then a final change should be made. We have in New York had no reason to believe that sensitization from the minute amount of serum in toxin-antitoxin creates any appreciable objection. At the present time the toxoid is more irritating in older children and adults because of the larger amount of protein it contains, while the toxin-antitoxin is slightly more irritating in young children because it is a slightly underneutralized mixture.

THE HUMAN RADIO AERIAL

To the Editor:—A friend of mine, a chemical engineer, discovered that the human body may act as a very good substitute for the usual radio aerial, but apparently not for all wave lengths. He has a five tube set. With either one of us touching the aerial connection, and the aerial disconnected from the set and ourselves, station KMOX (280 meters), for instance, can be brought in as plain as with the usual aerial. The detector dial setting, however, has to be quite different. The tighter the connection is gripped by the subject, the greater the volume. We have not been able to bring in KSD (545 meters) in this manner, although with the usual aerial it comes in very strong. The result is the same whether the subject stands directly on the floor or on a glass plate.

If the regular aerial is disconnected, and the set connected to about 60 feet of insulated copper wire wound on the lid of a cigar box, nothing can be brought in. If, now, one subject puts his hand on the insulated wire, KMOX can be brought in very well; the closer he presses his hand the larger the volume. If now the other subject puts his hand over another part of the insulated wire, the volume diminishes.

I am not a radio fan myself, but I am curious to know something about the physiology of these phenomena. Of what importance are they in the present state of our knowledge? Is there any literature on the subject? An answer, either through THE JOURNAL or direct, will be appreciated.

F. W. L. TYDEMAN, M.D., Wood River, Ill.

ANSWER.—All radio sets are tuned by adjusting inductance and capacity until the set as a whole is brought into resonance with the incoming carrier wave. The aerial is to be considered a part of the set, and changing its length will obviously change the inductance-capacity balance, and adjustment of the controls is necessary to bring again the set into resonance. When the human body was acting as an aerial, the equipment in the set was not adjusted (probably not adjustable) to the value necessary to bring the set into resonance at 545 meters.

Radio frequency discharges are not new. Electric motors, dynamos, storms and electrical disturbances of various kinds propagate them and they have been acting on the human body for years with an unknown but probably negligible effect. The physiologic effect of waves from radio broadcasting, to our knowledge, has never been discussed.

IRRITATION FOLLOWING SHAVING CREAMS

To the Editor:—I have had patients who complain of a condition resembling a mild eczema following prolonged use of soap-free shaving preparations (such as "Molle" and "Barbasol"). Have you information concerning the general composition of such preparations? Please use initials only.

H. W. S., M.D., Washington, D. C.

ANSWER.—These "soap free" shaving preparations are generally soaps, some of them prepared from potassium carbonate soaps containing spermaceti, others from potassium hydroxide or ammonium hydroxide with fats, egg white, alcohol and perfumes. Glycerin is also a frequent ingredient. Most of them are alkaline and may irritate as any soap does, by removing fat from the skin; others are superfatted. Irritation may be aggravated by the recommendation not to wash or rinse the face after shaving, but to permit the "cream" to dry.

PRESCRIPTION FOR HEXYLRESORCINOL

To the Editor:—Please advise me how I should write a prescription for hexylresorcinol, in both systems, for a girl of 13, with a *Bacillus coli* infection of the urinary tract, and also the adult dose of the drug.

A. L. H. MACNEILL, M.D., Cabri, Sask.

ANSWER.—Hexylresorcinol is best administered by mouth in elastic capsules, each capsule containing 0.15 Gm. in a 25 per cent solution in olive oil. The patient, being 13 years old, might be able to swallow such capsules. If not, it would be advisable to prescribe the 2½ per cent olive oil solution which is supplied by the manufacturer (New and Nonofficial Remedies Department, THE JOURNAL, Aug. 8, 1925, p. 437):

Caprokol (Hexylresorcinol-S. & D.) 2½ per cent solution in olive oil, 60 cc.

Label: Teaspoonful three times a day after meals.

GALVANIC AND FARADIC CURRENT FOR PARALYSIS

To the Editor:—I want to use a light galvanic and faradic current for such things as facial paralysis, and I am in doubt what to get, if any. I have been told that the wall plan (connected up with direct current) is the thing, by others that the small dry cell batteries are best. Can you let me know which is best? I favor the small battery on account of its portability, but I do not want it if it is not the thing.

EDWARD J. BERNSTEIN, M.D., Detroit.

ANSWER.—For the purpose stated, the galvanic current from a dry cell battery is sufficient. The galvanic current should be used only when the muscles will not respond to the faradic current, and then only for a few contractions of each muscle. When the muscles respond to the faradic current, a good instrument to use is the Bristow coil, which gives a sinusoidal faradic current. The use of this instrument is fully described in Jones' "Orthopedic Surgery of Injuries."

STAINING FLAGELLA — BACTERIOPHAGE — HEMAGGLUTINATION

To the Editor:—1. Please publish the Plimmer, McCrorie and Shunk methods for staining flagella of motile bacteria. 2. What are bacteriophages? How are they cultivated and demonstrated? Can the specific bacteriophages be used beneficially for administration to patients having the corresponding infection? 3. Is it necessary to test blood for agglutination previous to transfusion in the case of a new-born child? Please omit name.

M. J., Wisconsin.

ANSWER.—1. In the Plimmer method (*J. Path. & Bacteriol.* **24**:286 [July] 1921), a film is prepared on a warm slide, allowed to dry in air, and not fixed. One part of stain is mixed with four parts of water in a tube, the tube is inverted three or four times, and the mixture is filtered on the slide. The stain is allowed to act for sixty seconds and is washed under the tap. The film is flooded with cold "carbolfuchsin" solution for five minutes, washed, dried and examined. The stain is made of

Tannic acid	10 Gm.
Aluminum chloride (hydrated)	18 Gm.
Zinc chloride	10 Gm.
Rosaniline hydrochloride	1.5 Gm.
Alcohol (60 per cent)	40 Cc.

The dry ingredients are placed in a mortar and triturated with 10 cc. of the alcohol. When a homogeneous paste is formed, the rest of the alcohol is slowly stirred in. A deep red, viscous solution is obtained.

In McCrorie's method (Partridge, Aids to Bacteriology, ed. 4, p. 53), a fixed film is stained for two minutes with a mixture of solutions A and B.

SOLUTION B

Tannic acid	1 Gm.
Hot water	20 Cc.

After solution, there is added 1 Gm. of alum dissolved in 20 cc. of cold water.

SOLUTION A

McCrorie's night blue	0.5 Gm.
Dehydrated alcohol	20 Cc.

A is added to B slowly, with gentle shaking.

The Shunk method (*J. Bacteriol.* **5**:181 [March] 1920) is a modification of Loeffler's method. A film is prepared on a cover slip and dried in air. It should not be fixed with heat. It is covered with 8 drops of solution A, and then 1 drop of solution B is added. After it has acted at room temperature for two minutes, it is washed with water and drained (not blotted). It is stained for two or three minutes, washed, allowed to dry, and examined.

SOLUTION A

Ferric chloride solution, 1: 20	1 part
Tannic acid, saturated solution	3 parts

SOLUTION B

Aniline	1 part
Alcohol, U. S. P.	4 parts

STAIN

Methylene blue, saturated alcoholic solution	30 parts
Potassium hydroxide solution, 1: 10,000	100 parts
Solution B	13 parts

2. Some years ago, Twort observed transparent areas in growths of certain staphylococcus cultures. The organisms had apparently been dissolved. The lytic substance could be transferred to other cultures. Later, d'Herelle noticed the same phenomenon with dysentery cultures, found the lytic principle in filtrates from cultures, and obtained it in stools from dysentery patients. This lytic substance is known as bacteriophage. The nature of the bacteriophage is still a matter of dispute, particularly as to whether it is a living organism or is nonliving material formed during bacterial metabolism, possibly related to enzymes. The best method of demonstration is by means of agar plate cultures. The specificity of the bacteriophage is doubtful (Bacteriophage News, editorial, THE JOURNAL, Dec. 26, 1925, p. 2037). Attempts have been made to use bacteriophage as a therapeutic agent, but uniform success has not been attained.

3. When blood transfusion is made in new-born babies by means of intramuscular injections, it is not necessary to type the blood. For intravenous injection, blood should be typed.

COAL TAR ODOR—TREATMENT OF GASOLINE POISONING

To the Editor:—1. One of our butchers had a refrigerator built in his shop. It was lined with cork and coal tar, and lastly plastered over the cork and tar. Meat stored in it takes on the smell of coal tar. Is there some fumigation that will neutralize the effect of the coal tar? 2. What is the best treatment for a patient who has swallowed gasoline?

GAYLORD WORSTELL, M.D., Big Sandy, Mont.

ANSWER.—1. The only solution is to correct the condition at the source. Free circulating cold air would be the only safe agency to apply to the affected meat, and it is a question, of course, how effective this would be.

2. In the treatment of gasoline poisoning, evacuation of the stomach by emetics, and preferably by lavage, is the most important item to secure. It seems that, owing to the insolubility in and immiscibility of the agent with water, liberal quantities of oil might be used with advantage in the lavage, the oil to be subsequently removed as completely as possible by washing with water. There is no known antidote. Artificial respiration should be instituted early if there are indications of failure of respiration, and maintained resolutely for as long a time as there may seem the least possibility of resuscitation, as we deal here with an agent that not only depresses the respiratory center, but is also especially and rather rapidly eliminated by way of the respiratory tract. Possibly respiratory stimulants such as strychine or atropine may be of use. Emollients and protectives are to be employed in the treatment of resulting gastro-intestinal irritation.

FABRE'S TEST FOR BARBITAL

To the Editor:—In THE JOURNAL, April 11, 1925, reference was made to Fabre's test for barbital. As I have been unable to locate the technic for this, will you please provide me with this information?

R. C. SATTERLEE, San Diego, Calif.

ANSWER.—The chemical reaction is based on the formation of certain crystalline dixanthyl compounds of hypnotics derived from barbituric acid, developed in the presence of acetic acid which among other characteristics are identifiable by their melting points. The procedure is: To an acetic acid solution of barbital (1 Gm. to 10 cc. of acetic acid), 2 Gm. of xanthydrol is added. The mixture is brought to the boiling point; on cooling, a crystalline precipitate is produced, which slowly becomes more abundant. After a few hours, the latter is allowed to dry (centrifugalized) and the excess of barbital and of xanthydrol are removed by successive washing with hot alcohol. It is recrystallized from benzene in the form of small colorless prismatic crystals, melting at from 245 to 246 C. The crystals are soluble in benzene and slightly soluble in acetic acid and warm alcohol. In his article (Sur une réaction du véronal et des hynotiques dérivés de l'acide barbiturique, applications, *J. de Pharm. et de chim.* **2**:241, 1922) René Fabre gives the technic that should be followed for the toxicologic determination of barbital and its derivatives using this reaction.

AMERICAN CARBONIC ACID NAUHEIM BATHS

To the Editor:—In Queries and Minor Notes (THE JOURNAL, March 6, p. 709) I saw the information you give in regard to carbonic acid Nauheim baths. You do not mention the springs of which I spoke in my book on Sexual Impotence (ed. 6, Philadelphia, W. B. Saunders Company, 1920). These springs, unfortunately, were called Vichy, which only shows the ignorance of the owners. It is, however, a fact that these springs outnauheim in every respect Nauheim itself, and anything that ever was attempted in the shape of carbonic acid gas baths.

The water of these springs, located near Ukiah, in California, has the proper temperature and flows day and night. I personally consider these baths excellent, but, and again unfortunately, the accommodations and the table are rather modest, and the modern luxury-loving public ignores the place.

VICTOR G. VECKI, M.D., San Francisco.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

AMERICAN BOARD OF OTOLARYNGOLOGY, TEXAS: Dallas, April 19, CALIFORNIA: San Francisco, April 27. Sec., Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Mo.

ARKANSAS: Little Rock, May 11-12. Sec., Dr. J. W. Walker, Fayetteville. Homeo. Board, Little Rock, May 11. Sec., Dr. A. A. Pringle, Eureka Springs. Eclectic Board, Little Rock, May 11. Sec., Dr. Claude E. Laws, Fort Smith.

GEORGIA: Atlanta, June 9-11; Augusta, June 1-3. Sec., Dr. C. T. Nolan, Marietta, Ga.

MICHIGAN: Ann Arbor, June 8-10. Detroit, June 14-16. Sec., Dr. Guy L. Connor, 707 Stroh Bldg., Detroit.

NATIONAL BOARD OF MEDICAL EXAMINERS: Part I, June 21-23; Part II, June 22-23. All applications should be made on or before May 15. Sec., Dr. J. S. Rodman, 1600 Walnut Street, Philadelphia.

NEBRASKA: Omaha, June 8-10. Director, Bur. of Exam. Bds., Mrs. Clark Perkins, Lincoln.

NEVADA: Carson City, May 3. Sec., Dr. Simon L. Lee, Carson City.

Colorado January Examination

Dr. David A. Strickler, secretary of the Colorado Board of Medical Examiners, reports the written examination held at Denver, Jan. 5, 1926. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Of the 10 candidates who took the physicians' and surgeons' examination, 5, including 1 undergraduate, passed and 5, including 2 osteopaths, failed. Fourteen candidates were licensed by reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
College of Physicians and Surgeons, Boston	(1925)	84.1
Kansas City University of Physicians and Surgeons	(1924)	76.3
National University of Ireland, Dublin	(1924)	83.1
University of Amsterdam, Netherlands	(1919)*	89.3
Undergraduate		80.5

FAILED		
College	Year Grad.	Per Cent
Kansas City College of Medicine and Surgery	(1924)	64
St. Louis College of Phys. and Surgs.	(1923) 70.8, (1924)	73.8
Osteopaths		64.8, 73

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery	(1917)	Illinois
Northwestern Univ. Medical School	(1905) Illinois, (1918)	California
Kansas Medical College, Topeka	(1909)	Kansas
Harvard University	(1921)	Connecticut
National University of Arts and Sciences, St. Louis	(1915)	Missouri
St. Louis University School of Medicine	(1924)	Missouri
University of Nebraska School of Medicine	(1918)	Nebraska
University of Pennsylvania School of Medicine	(1920)	Utah
Meharry Medical College	(1895)	Texas
Vanderbilt University School of Medicine	(1913), (1916)	Tennessee
Medical College of Virginia	(1915)	Virginia
Chiba Special Medical School, Japan	(1918)*	Nevada

* Verification in process.

Kansas February Examination

Dr. A. S. Ross, secretary of the Kansas State Board of Medical Registration and Examination reports the written examination held at Topeka, Feb. 9-10, 1926. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Eight candidates were examined, all of whom passed. Ten candidates were licensed by reciprocity. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent
University of Colorado School of Medicine	(1925)	92.1
Chicago Homeopathic Medical College	(1902)	80
Rush Medical College	(1900)	93.8
St. Louis University School of Medicine	(1925) 86.6, (1926)	88.8
University of Pennsylvania School of Medicine	(1925)	90.8, 90.9
Meharry Medical College	(1925)	89.3

LICENSED BY RECIPROCITY		
College	Year Grad.	Reciprocity with
Hahnemann Medical College and Hospital, Chicago	(1886)	Michigan
Louisville Medical College, Louisville	(1904)	Washington
University of Louisville School of Medicine	(1924)	Kentucky
Creighton Medical College	(1924)	Nebraska
Univ. of Nebraska School of Med.	(1923), (1924), (1925)	Nebraska
Ohio Medical University, Columbus	(1903)	California
Chattanooga Medical College	(1905)	Oklahoma
Vanderbilt University School of Medicine	(1916)	Kentucky

Book Notices

INSULIN. Its Use in the Treatment of Diabetes. Part I—Physiology. By J. J. R. Macleod, Departments of Medicine and Physiotherapy, University of Toronto. Part II—Clinical Section. By W. R. Campbell, Departments of Medicine and Physiotherapy University of Toronto. Medicine Monographs. Volume VI. Cloth. Price, $4. Pp. 242, with 6 illustrations. Baltimore: Williams & Wilkins Company, 1925.

In this volume the authors bring together much of the work that has already appeared in various publications. The first part deals with points of historical interest, a description of the methods of preparation of insulin, the sources of supply and the theories of its action. Beginning with the effects of pancreatectomy as first described by Minkowski, the authors trace the development of the study of diabetes through the work of Szobalew, Schults, Zuelzer, Knowlton, Starling, Grey, Scott, Murlin and Kleiner to that culminating in the discovery of insulin by Banting and Best. Several methods of preparation of insulin are described. The theory of the action of insulin most acceptable to the authors is that insulin has some effect on sugar metabolism which helps glucose to pass through a glycogen state, in order to proceed to final oxidation. Although absolute proof of this theory is not at hand, experimental evidence favoring this view has been adduced. The action of insulin in restoring to normal the migration of fat between the liver and the tissues, its effect on oxidation and on raising the respiratory quotient, its varying action on protein-derived and actual carbohydrates, its effect on the passage of sugar through the tissues, the association of carbohydrates and phosphates (the hexo phosphates) and the determination of the value of the unit are described in detail. The second part is devoted to a clinical consideration of insulin in metabolism, the diagnosis and treatment of diabetes and a listing of many diets, tables and recipes for the physician's use. That "insulin is a crutch which slips at times" is a statement worth remembering. Dr. Campbell recommends the slow addition of insulin and agrees with many workers that the maintenance of a low blood sugar is advisable. The thoroughness and simplicity, its conservatism, and the excellent manner of presentation, together with its intrinsic value, will recommend this book to all physicians and students of diabetes.

DIE CHIRURGIE. Eine zusammenfassende Darstellung der allgemeinen und der speziellen Chirurgie. Herausgegeben von Prof. Dr. M. Kirschner und Prof. Dr. O. Nordmann. Lieferung 5, Band VI. Die Chirurgie der Niere, des Nierenbeckens und des Harnleiters. Von Prof. Dr. P. Frangenheim und Priv.-Doz. Dr. E. Wehner. Die Chirurgie der Harnröhre. Von Priv.-Doz. Dr. E. Wehner. Die Chirurgie des Penis und Scrotums. Von Priv.-Doz. Dr. E. Wehner. Die Chirurgie des Hodens, Nebenhodens, Samenstranges und der Scheidenhäute. Von Priv.-Doz. Dr. E. Wehner. Paper. Price, 27 marks. Pp. 229-750, with 108 illustrations. Berlin: Urban & Schwarzenberg, 1925.

The fifth section of this work is devoted to the surgery of the kidney, ureters and male genitalia. The method of dealing with the various topics is similar to that in the sections which have thus far appeared. The subject matter, however, is treated much more comprehensively and at greater length. The first part of the book, the part dealing with the kidney and ureters, is written by Frangenheim and Wehner, and the rest of the book by Wehner.

THE SCIENCE OF BIOLOGY. An Introductory Study. By George G. Scott, Ph.D., Associate Professor of Biology in the College of the City of New York. Cloth. Price, $3.50 net. Pp. 617. New York: Thomas Y. Crowell Company, 1925.

The author apparently conceived a plan that he was unable to justify in his unhappily named textbook. In general, this plan is that laid down by the taxonomist. To treat plants and animals virtually order by order, along with a consideration of all branches of biology, in a single book, presents a stupendous task which should require much thought as to organization and balance, in addition to thorough command of scientific fact. But it is difficult to say whether the chaotic arrangement of material or the complete innocence of scientific knowledge is the more glaring. The text is couched in pitiful English, which of itself would convey a confused meaning.

A jerky style, in which sentence follows sentence with no evident interrelationship, contributes to the general confusion. On page 447, one marvels at the extremes to which precocity goes when "Cases have occurred in which there was an unusually early development in children of secondary sex organs." It is implied on page 310 that the egg of the duckbill can swim: "Eggs, about ¾ inch long, with yolk and a shell, are laid at the ends of burrows in river banks. The animal is also aquatic in its habits." Again, on page 255 a strange picture comes to mind where the dogfish "skull consists of a cartilaginous box-like cranium enclosing the brain and the visceral skeleton." In a paragraph on spawning (page 267) the closing sentences are: "Some eggs hatch in less than a day's time. A month is needed in the case of salmon. Some deep sea fish have *luminescent* organs." Practically every page offers similar examples. Even more surprising are the gross errors of fact. On page 319 we learn that "the narwhal has a long, twisted bony beak in front." Conscientious taxonomists will note with alarm that the badger, marten and weasel (page 329) are no longer mustelids, but bears (Ursidae). The homologies which the author apparently implies (pages 357-358) between the anterior and the posterior limbs are thoroughly misleading. Assuming that Professor Scott wished to avoid presenting involved or complicated ideas to immature students, it is decidedly unfair, even for the sake of simplicity, to create erroneous impressions. Moreover, he cites difficult chemical and biometric formulas which assume well advanced training on the part of the reader. With the word Diptera before him, Professor Scott describes them (page 235) as "the flies which have two pairs of wings on the mesothorax." Practically every school boy knows that no spider or daddy long legs has pincers, but in the description of the class Arachnida (page 245) "the first pair of appendages are nippers." In view of the frequent descriptions of the evolution of the horse, it would seem scarcely possible to go far wrong. In two pages (478-480) there are no less than nine errors and nine verbal infelicities. One example should be more than enough. "The upper surface of the teeth is ground flat and continued to grow as it wore away." Instances could be multiplied, but a fitting climax can be quoted from the section on Carnivora (page 327): "Their movements [are] full of grace and beauty oftentimes marred by stealth and cunning." There are a number of original drawings which, on the whole, are on a par with the text in value and accuracy. On page 225, in the diagram of the intestinal tract of the cockroach, various parts are mislabeled and the intestine is omitted entirely. Other figures (pages 180, 250, 275 and 296) are fortunately labeled to aid in recognition. The large number of illustrations reproduced from other sources are distinctly the best part of the book. Many of them are worthy of a better fate.

ABHANDLUNGEN AUS DER NEUROLOGIE, PSYCHIATRIE, PSYCHOLOGIE UND IHREN GRENZGEBIETEN. Herausgegeben von K. Bonhoeffer. Heft 32. Familienpsychosen im schizophrenen Erbkreis (Psychosen bei den Eltern von Dementia Praecox-Kranken). Von Dr. Hermann Hoffmann, Privatdozent für Neurologie und Psychiatrie an der Universität Tübingen. Paper. Price, 7.20 marks. Pp. 120, with 8 illustrations. Berlin: S. Karger, 1926.

The author has studied the families of patients with schizophrenia and determined the psychosis present in each member. He roughly classifies each of the individuals of his series, according to the modern trend, into schizoid, cyclothymic and mixed personalities. He gives the following interesting figures: in schizophrenic patients, both parents were schizoid in 52 per cent, one parent in 46 per cent, and neither parent in only 2 per cent. Between 40 and 50 per cent of the collaterals were schizoid, 25 per cent cycloid, and only 11 per cent of the mixed type. The author finds that the majority of schizophrenic patients come from families which have contained one or more members suffering from the same psychosis. The same observation holds true for manic-depressive insanity. In both these groups, the patient before the development of his psychosis is usually schizoid in the schizophrenic and cyclothymic in the manic-depressive. When a patient with schizophrenia has had a cyclothymic personality, his psychosis is not typical, and when it has been schizoid his psychosis is pure and has a typical symptomatology. The author believes that for each great group of psychosis there is a specific anlage which is inherited in the form of a general disposition for the development of a type of psychosis. His statistical work is convincing.

ACUTE INFECTIOUS DISEASES. A Handbook for Practitioners and Students. By J. D. Rolleston, M.A., M.D., Senior Assistant Medical Officer, Grove Fever Hospital, London. Cloth. Price, $5. Pp. 376. New York: Physicians & Surgeons Book Company, 1925.

Dr. Rolleston has written clear and brief accounts of the chief acute infectious diseases, those ordinarily treated in isolation hospitals. Typhoid and typhus fevers are included, but poliomyelitis, encephalitis and others are not. The clinical aspects, symptoms and treatment are given fully, the etiology and morbid changes more briefly. Some of the recent advances in the field are discussed, such as the prevention of measles with the blood and serum of convalescents, although there is no mention of the treatment of scarlet fever with antitoxin. The historical notes at the beginning of each chapter are interesting, and the bibliographic notes at the end are helpful in further reading on the various subjects.

PATHOLOGISCH-ANATOMISCHE STUDIEN ÜBER DIE OSTEODYSTROPHIA FIBROSA (SOG. OSTITIS FIBROSA V. RECKLINGHAUSEN). Akademische Abhandlung zur Erlangung der medizinischen Doktorwürde mit Genehmigung der weiterfahrenen medizinischen Fakultät zu Uppsala Vorgelegt. Von Ture Stenholm. Fil. Mag., Norrl. Paper. Pp. 211, with illustrations. Uppsala: Almqvist & Wiksells, 1924.

This discusses the subject of osteitis fibrosa of von Recklinghausen from the standpoint of pathologic anatomy. Twelve cases are reported. Various types of osteitis fibrosa are discussed, chiefly under the two headings of (1) metaplastic malacia, or osteitis fibrosa of von Recklinghausen, and (2) hypertrophic metaplastic malacia, or osteitis deformans of Paget. The monograph contains a complete bibliography, and several excellent illustrations, some of which are in color.

METHODS IN SURGERY. Used in the Surgical Divisions of Barnes Hospital, St. Louis Children's Hospital, and Washington University Dispensary. Including outlines for case history-taking, preoperative and postoperative care of patients, routines, diets, etc. By Glover H. Copher, M.D., Instructor in Surgery, Washington University School of Medicine. Cloth. Price, $3. Pp. 232. St. Louis: C. V. Mosby Company, 1925.

This is a working manual of hospital routine written primarily for the guidance of house officers and students of Washington University School of Medicine working in the surgical divisions of Barnes Hospital, the St. Louis Children's Hospital, and the Washington University Dispensary. The chapters embrace history taking, roentgen-ray department rules, ward and operating room routine, postoperative treatment, and care of special types of cases, as in plastic, neurosurgical, gynecologic and genito-urinary operations. The book is brief, yet covers the material in close detail. A complete set of chart forms and special diets is presented. Since it represents the work of an excellent hospital organization, it merits the attention of the resident staff of other hospitals and also of the young surgeon in practice.

LA TÉTANIE INFANTILE. Recherches cliniques et expérimentales. Par. R.-A. Turpin. Préface du Docteur E. Lesne. Paper. Price, 16 francs. Pp. 223, with illustrations. Paris: Masson et Cie, 1925.

This is an excellent combination of experimental and clinical medicine. Furthermore, it has the advantage of expressing the personal work of the author. A sufficient historical and bibliographic division, and a comprehensive discussion of modern conceptions of the acid-base balance of the body make it complete. The relationship of alkalosis and blood calcium deficiency to spasmophilia and to tetany is well brought out, particularly in the detailed case reports. The outline of the analytic methods is adequate.

HANDBOOK OF PATHOLOGY. By C. Y. Wang, M.D., B.Sc., F.R.C.P., Professor of Pathology in University of Hongkong. Cloth. Price, $7. Pp. 513, with 282 illustrations. New York: William Wood & Co., 1925.

This is a short descriptive pathology, a classification of the chief morbid changes, with their etiology, and gross and microscopic appearance as they occur in the different organs. There is no theoretical discussion and no discussion of controversial subjects, such as the pathogenesis of edema or the origin of tumors. The material is arranged according to the etiology or

the character of the changes, without a special part dealing with the pathology of the different organ systems. The book would be useful chiefly for students as a preliminary survey of the subject and would have to be supplemented by a more extensive work. Its small size and brevity make it convenient for rapid reference or review.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

ANATOMIE CÉRÉBRALE LES NOYAUX GRIS CENTRAUX ET LA RÉGION MÉSENCÉPHALO-SOUS-OPTIQUE. Suivi d'un appendice sur l'anatomie pathologique de la maladie de Parkinson. Par Ch. Foix, professeur agrégé a la Faculté de médecine de Paris, et J. Nicolesco, assistant d'histologie a la Faculté de médecine de Bucarest. Cloth. Price, 100 francs. Pp. 581, with 62 illustrations. Paris: Masson & Cie, 1925.

Neurologic anatomy, with especial reference to Parkinson's disease.

ÉTUDE ANALYTIQUE ET SYNTHÉTIQUE DE LA SYMPATHECTOMIE PÉRIARTÉRIELLE APPLIQUÉE AU TRAITEMENT DES ULCÈRES CHRONIQUES DES MEMBRES INFÉRIEURS. Physiopathologie et résultats immédiats et éloignés de la denudation arterielle. Par le Docteur Guillermo Garcia-Diaz, de la Faculté de médecine de Paris et de Buenos-Aires. Paper. Pp. 281, with illustrations. Paris, Le François, 1925.

Periarterial sympathectomy for ulcers of the leg.

CLINIQUE MÉDICALE DE L'HÔPITAL BEAUJON. Par Ch. Achard, Professeur de clinique medicale a la Faculté de médecine de Paris. Deuxième série. Paper. Price, 24 francs. Pp. 336, with 66 illustrations. Paris: Masson & Cie, 1925.

Considerations of gout, diabetes, syringomyelia and cirrhosis of the liver, based on study of specific cases.

HEALTH CONTROL IN MERCANTILE LIFE. A Problem of Conserving Human Energy. By Arthur Brewster Emmons, 2d, A.B., M.D., Director, Harvard Mercantile Health Work, Boston. Cloth. Price, $3. Pp. 234, with illustrations. New York: Harper & Brothers, 1926.

Easily readable study of health conditions in stores, well illustrated and full of practical advice.

OPHTHALMIC NEURO-MYOLOGY. A Study of the Normal and Abnormal Actions of the Ocular Muscles from the Brain Side of the Question. By G. C. Savage, M.D., LL.D. Second edition. Cloth. Price, $3. Pp. 227, with illustrations. Nashville, 1926.

New edition of standard work, with some revisions because of new discoveries as to ophthalmic axes of rotation.

A MANUAL OF THE PARASITIC PROTOZOA OF MAN. By Charles F. Craig, M.D., M.A., Lieutenant-Colonel, Medical Corps, U. S. Army, D.S.M. Cloth. Price, $7. Pp. 569, with 95 illustrations. Philadelphia; J. B. Lippincott Company, 1926.

Complete and authoritative presentation for use of student and practitioner.

HANDBUCH DER PHYSIOLOGIE DER NIEDEREN SINNE. Von Emil von Skramlik, a. o. Professor der Physiologie an der Universität, Freiburg, i. B. I Band. Die Physiologie des Geruchs und Geschmackssinnes. Paper. Price, 31.50 marks. Pp. 532, with 70 illustrations. Leipsic: Georg Thieme, 1926.

Highly technical details on physiology of smell and taste.

EPISODISCHE DÄMMERZUSTÄNDE. Ein Beitrag zur Kenntnis der konstitutionellen Geistesstörungen. Von Professor Dr. K. Kleist, Direktor der psychiatrischen und Nervenklinik Frankfurt a. M. Paper. Price, 3.60 marks. Pp. 80. Leipsic: Georg Thieme, 1926.

Case reports and psychiatric studies of various psychopathic types.

METHODS OF INVESTIGATING VENTILATION AND ITS EFFECTS. By H. M. Vernon and Others. Medical Research Council. Special Report Series, No. 100. London: His Majesty's Stationery Office, 1926.

Shows that temperature and clothing are more important in regulating body temperature than is air velocity.

FOOD PRESCRIPTIONS FOR OVERWEIGHT. By Harrington Bennett Monroe, M.D. Cloth. Price, $1.50. Pp. 50. Los Angeles: McCulloch Press, 1925.

Sensible advice, sensibly presented.

OLD MASTERPIECES IN SURGERY. Being a Collection of Thoughts and Observations Engendered by a Perusal of Some of the Works of Our Forebears in Surgery Which Appeared in Serial Form in Surgery, Gynecology and Obstetrics During 1924 and 1925. By Alfred Brown, M.D. Privately published. Omaha, 1926.

Well illustrated collection of essays of historical interest.

NEPHRITIS. By Herman Elwyn, M.D., Assistant Visiting Physician, Gouverneur Hospital, New York, N. Y. Cloth. Price, $5. Pp. 347, with 2 illustrations. New York: Macmillan Company, 1926.

Complete presentation of modern knowledge, based on literature and experience.

DIAGNOSI E TERAPIA CLINICA DEGLI AVVELENAMENTI. Guida per medici e studenti. Por Dott. Guisto Coronedi, Professore di Farmacologia nella R. Universita. Cloth. Pp. 310, with illustrations. Florence: G. Barbèra, 1926.

Students' manual of little general value.

DIE PERSÖNLICHKEITSANALYSE. Eine vorbereitende Methode für jede Psychotherapie der Neurosen. Von Dr. Ernst Jolowicz, Nervenarzt in Leipzig. Paper. Price, 2.10 marks. Pp. 83. Leipsic: Georg Thieme, 1926.

System of study for psychotherapists.

HYGIENE OF SEX. By Max von Gruber. Cloth. Price, $1.50. Pp. 169, with illustrations. Baltimore: Williams & Wilkins Company, 1926.

Sound presentation, plain spoken, but in language a little technical for those under high school intelligence.

LE RÊVE ET LA PSYCHANALYSE. Par le Dr. R. Laforgue. Avec la collaboration des docteurs Allendy, Ed. Pichon, R. de Saussure. Introduction de M. le Dr. Hesnard, Professeur de l'Ecole médecine navale de Bordeaux. Paper. Price, 12 francs. Pp. 248. Paris: A. Maloine, 1926.

Poorly printed on poor paper, and not especially scientific.

LEXIKON DER ERNÄHRUNGSKUNDE. Herausgegeben von Dr. E. Mayerhofer, Professor an der Universität, Zagreb, und Dr. C. Pirquet, Professor an der Universität, Wien. Lieferungs 3 und 4. Paper. Pp. 337-892. Vienna: Julius Springer, 1925.

Letters G through M of a German dictionary of nutrition.

LES TUMEURS DU CERVEAU. Par le Professeur Viggo Christiansen, Médecin en chef de l'Hôpital royal du Danemark. Avec une préface du Pr. Pierre Marie. Second edition. Paper. Price, 45 francs. Pp. 398, with 107 illustrations. Paris: Masson & Cie, 1925.

Complete study of tumors of the brain and spinal cord.

FRESH AIR AND VENTILATION. By C.-E. A. Winslow, Professor of Public Health, Yale School of Medicine. Cloth. Price, $2. Pp. 182. New York: E. P. Dutton & Co., 1926.

Complete and quite practical consideration of a timely subject, interesting to both physician and public.

DER HOHLFUSS. Seine Entstehung und Behandlung. Von Dr. M. Hackenbroch, Privatdozent, Oberarzt der orthopädischen Klinik, Köln. Paper. Price, 6.60 marks. Pp. 83, with 40 illustrations. Berlin: Julius Springer, 1926.

Monograph on common subject suitable to specialists.

LAS GLANDULAS MORFOGENAS Y LA VEJEZ. Discurso leido en la real Academia de Medicina y Cirugia de Barcelona el dia 15 de Noviembre de 1925, en el acto de la recepsión del académico electo. Por Dr. Jesus M. Bellido Golfericha. Discurso de contestación del académico numerario. Por Augusto Pi Suñer. Paper. Pp. 37. Barcelona, 1925.

THE PHARMACOPOEIA OF THE UNITED STATES OF AMERICA. Tenth Decennial Revision (U. S. P. X.). By authority of the United States Pharmacopoeial Convention. Official from January 1, 1926. Cloth. Price, $4. Pp. 626. Philadelphia: J. B. Lippincott Company, 1926.

BERICHT DER SONDERTAGUNG DES VEREINS DER AERZTE FÜR NERVENMASSAGE. Berlin, 14, und 15. April 1925, sowie der ordentlichen Sitzungen des Vereins, vom 8, September und 24, Oktober, 1925. Paper. Price, 3.60 marks. Pp. 104. Leipsic: Georg Thieme, 1926.

LE TERRAIN HÉRÉDO-SYPHILITIQUE. Aperçu de pathologie générale et de clinique infantiles. Par V. Hutinel, Professeur honoraire de clinique médicale infantile. Paper. Price, 30 francs. Pp. 455. Paris: Masson & Cie, 1926.

REGISTRY AND RETURN OF BIRTHS, MARRIAGES AND DEATHS, AND OF DIVORCE, IN THE STATE OF RHODE ISLAND FOR THE YEAR ENDING DECEMBER 31, 1923. Seventy-first report. Providence, 1925.

"KINÉSIE PARADOXALE" DES PARKINSONIENS. Contribution à l'étude du mécanisme de la motilité volontaire. Par Dr. J. Jarkowski. Paper. Price, 12 francs. Pp. 78. Paris: Masson & Cie, 1925.

LES ANGINES DE POITRINE. Par Louis Gallavardin, Médecin des hôpitaux de Lyon. Price, 25 francs. Cloth. Pp. 181. Paris: Masson & Cie, 1925.

PROCEEDINGS OF THE FORTIETH ANNUAL MEETING OF THE CONFERENCE OF STATE AND PROVINCIAL HEALTH AUTHORITIES OF NORTH AMERICA. 1925.

LES CINQ SENS. Les curiosités de la médecine. Par le Docteur Cabanès. Paper. Pp. 308. Paris: E. Le François, 1926.

FRENCH BENEVOLENT SOCIETY OF NEW YORK. Annual Report for the year ending September 30th, 1925.

Miscellany

CLINICAL THERMOMETERS

BRADFORD NOYES, JR., PH.D.
ROCHESTER, N. Y.

Of all the instruments used by the physician, none is more essential than the clinical thermometer.

In view of legislation already passed in several states, and of some agitation for a national law controlling the manufacture and sale of this type of thermometer, it was thought desirable that an exhaustive study be made of clinical thermometers. This investigation is now complete, and the results will be published at an early date.[1] In this instance the work of Waidner and Fischer[2] was of assistance.

The physician must have a thermometer correct within certain limits of accuracy. What these limits are is best determined by the physician himself, and the clinical thermometer manufacturer will try to meet the demand. The physician wants a good thermometer, but he does not want to pay for value that is not received. To require a thermometer manufacturer to carry a stock of half a hundred kinds of thermometers, each marked with the seal of a particular state, is an obvious burden, which must be passed on to the purchaser.

No matter how strict the inspection of the various laboratories, much must be left to the integrity of the manufacturer. It is the unseen thing, the care in manufacture, that makes true value. In the following paragraphs, an attempt is made to explain briefly some of the factors to be considered.

The first material that goes to make up a clinical thermometer is the glass. If it is made of certain grades of glass, and not properly aged before pointing, errors as high as 0.6 degree F. are liable to develop after several months' use. The use of a good quality of glass will reduce this source of error to about 0.1 degree F., and if the thermometer is properly aged it becomes entirely negligible.

The quality of the mercury with which the thermometer is filled is of prime importance. An average human hair is twenty times as large as some of the capillary used, and any impurity in the mercury detracts from the reliability of the instrument.

The device that causes the clinical thermometer to register the highest temperature to which it has been exposed is called the contraction. It consists essentially of a constriction in the tube, which allows the mercury to pass upward when forced by the mercury below, but prevents it flowing back without the application of some force. The formation of the contraction requires great skill on the part of the workman. Unfortunately, he is unable to make each just alike.

Some contractions allow the mercury to flow upward in a continuous stream, while in others it goes up in a series of jumps. The first type is liable to be a retreater; that is, it allows the mercury to run back. In fact, there is reason to believe that every thermometer with this kind of contraction will, if cooled slowly enough, retreat. It should be pointed out, however, that in ordinary practice the thermometer is removed from the patient's mouth, and allowed to cool quickly to room temperature. One laboratory, in testing for "retreaters," cools the thermometer very slowly. This is not a condition that exists in actual use, and, in my opinion, seems unnecessarily severe.

The second type of contraction, that which always allows the mercury to pass through in jumps, has one great advantage—it is never a retreater. But there are also disadvantages. If the jumps are large, the thermometer cannot be depended on for accurate readings. If the amount of mercury per jump corresponded to 0.4 degree F., in the bore, the thermometer might well be in error by that amount, and may fail to repeat by as much as 0.8 degree F. However, if the jumps are small, such thermometers are to be desired. The value 0.4 degree F. is exceptional, being the largest jump I have seen. More often the jumps amount to about 0.1 degree F. As a usual thing, thermometers which shake down easily either have big jumps or are liable to be retreaters. This is not always true, for thermometers have been found which the Bureau of Standards would reject as hard shakers, and which one state laboratory would reject as retreaters.

The space above the mercury in a clinical thermometer is carefully evacuated, but of course it is absolutely impossible to remove all the gas. This gas above the column does no harm, unless its pressure is sufficient to cause an otherwise perfect tube to retreat. Most regulations wisely permit a certain amount of gas above the column. Gas which remains in the contraction is liable to separate the mercury column, and will cause an error equal to the length of air space. In some cases, this air space is so small as to be visible only under a microscope, and does not cause complete separation of the mercury column. The inaccuracies caused by such air space are negligible, and may be disregarded. As most regulations on this subject are poorly worded, some testing laboratories are entirely too severe, while others pay entirely too little attention to this source of error. It is suggested that any tube be rejected in which the air space is sufficient to cause complete separation of the mercury. This is severe enough for all practical purposes, but not an impossible requirement for the manufacturers to meet.

Each clinical thermometer has to be individually "pointed." That is, a small file mark is placed on the tube opposite the top of the mercury when the bulb is placed in a bath of known temperature. Two such marks are placed on each tube, one corresponding to a temperature of 96 F., the other corresponding to 106 F. Different manufacturers use different temperatures for the points, but the method is the same in each case. To maintain proper apparatus requires considerable outlay of capital. Special baths have to be provided, the temperature of which may be accurately controlled, and the water must be constantly agitated by mechanical means. Standard thermometers must be procured and subjected to periodic calibration.

After being pointed, the tubes are waxed and sent to the engraving department. Here an engraving machine is so set that the 96 F. and 106 F. points fall on the file marks previously described. The machine graduates the intervening space into the proper number of equal spaces, and the thermometer is then ready to be etched.

The certification requires more water baths, more standard thermometers and more skilled help. It is here that the thermometer is given its final inspection and unreliable tubes rejected.

In the foregoing, I have not attempted to give the details of manufacture. Points have been discussed which are thought to interest the medical man. An attempt has been made to show that much depends on proper manufacture, and this requires much more capital than most readers imagine. The safest thing for the physician to do is to buy good thermometers, made by manufacturers of recognized standing.

1. Noyes: Journal of the Optical Society of America and Review of Scientific Instruments, 1926.
2. Waidner and Fischer: Bulletin Bureau of Standards 1, No. 2, 1904.

Medicolegal

Practice Act Should Receive Reasonable Construction

Levin v. Board of Medical Examiners of California et al. (Calif.), 239 Pac. R. 410)

The District Court of Appeal of California, first district, division 1, says that the petitioner asked for mandate to compel the board of medical examiners to issue to him a license entitling him to practice medicine and surgery in the state of California. He alleged that he had taken a full course at the Detroit College of Medicine, and on May 24, 1907, the secretary of the college gave him a certificate stating in substance that he had passed his final examinations and would be recommended to the trustees for graduation; that on the 27th he presented his certificate to the board of medical examiners of Michigan; and that on the 30th he received from the college a diploma conferring on him the degree of doctor of medicine. The respondent board contended that he had not received a diploma at the time he presented himself for examination before the Michigan board, and that the act of that board in subsequently admitting him to practice adopted a standard less than that required by the laws of California, which justified a refusal to issue the reciprocity license applied for. The sole question presented here was whether or not the petitioner in legal contemplation was possessed of a diploma from the medical college at the time he was permitted to take his examinations before the Michigan board.

If the act of the board of medical examiners of Michigan permitting him to take the examinations before his diploma could be actually made out and issued to him constituted the maintaining of a standard not equal to that of California, then the petitioners was not entitled to the relief sought. If, on the other hand, the possession by him of the certificate and the subsequent issuance to him of his diploma was to all legal intents and purposes the possession by him of a diploma, then it was conceded that the petitioner was entitled to a license on reciprocity, and it should be issued to him. To state the question was to answer it. The certificate was to all intents and purposes the equivalent of a diploma. It certified that the petitioner had passed his final examinations, and he was therefore entitled as a matter of right to a diploma. Moreover, the diploma was in fact issued to him before he was granted his license. To say that under such circumstances he was not possessed of a diploma entitling him to take his examinations would be to put a narrow construction on the California statute, which requires the filing of a diploma prior to the taking of examinations. The statute should receive a reasonable construction, and the spirit and reason should prevail over the letter. This court is therefore of the opinion that the petitioner was entitled to the relief sought.

While, ordinarily, the action of an officer clothed with a discretion is not reviewable if exercised on matters left to his discretion, yet where the discretion is abused and made to work injustice, it may be controlled by mandamus. In this case this court thinks that the board acted arbitrarily and abused its discretion. Therefore, let the writ issue.

Neurasthenic Condition Due to Injury Compensable

(Rialto Lead & Zinc Co. et al. v. State Industrial Commission et al. (Okla.), 240 Pac. R. 96)

The Supreme Court of Oklahoma holds that, under the workmen's compensation act, an employee who had sustained an injury arising out of and in the course of his employment was entitled to compensation for partial disability where it appeared that at the time the question was being considered he was probably not suffering with physical disability, but had neurasthenia which had its origin in the accidental injury, and was unable to work at his former occupation, but was able to do lighter work for which he received about one-half the wage that he had previously earned. The court says, after noting that it had been stated that it had never passed on the question of whether a neurotic whose trouble has its origin in an accidental injury is entitled to compensation, that it does not hesitate to say that when a mental condition comprehended under the term of "neurasthenia" is shown by competent evidence to exist as a direct result of a physical injury sustained by an employee, arising out of and in the course of his employment, which condition deprives the employee of working in his former occupation, the same would be compensable under the workmen's compensation act of Oklahoma. It is well settled by a long line of English decisions, based on workmen's compensation acts, that, where neurasthenia intervenes after an accident and produces incapacity, to entitle the workman to compensation for an accidental injury the preceding injury must be shown to be the proximate cause of the neurasthenic condition.

In other words, this court holds, as it restates it, that where, as the approximate result of an accidental personal injury sustained by an employee arising out of and in the course of his employment, such employee, after all objective and subjective symptoms of actual physical injury are removed, suffers from a nervous breakdown and a neurasthenic condition ensues attributable to such injury which precludes the employee from resuming his work in his former occupation, such mental condition is an injury arising out of and in the course of his employment and is compensable under the provisions of the workmen's compensation act.

Health Officer and Commissioners Must Act Together

(Eckles v. Board of County Commissioners of Hughes County (Okla.), 239 Pac. R. 567)

The Supreme Court of Oklahoma, in affirming a judgment for the defendant, says that the plaintiff sought to recover on two itemized accounts for services and expenses in treating smallpox in 1921 and 1922, and that the question involved in this appeal was the legality of claims and expenditures for him as county superintendent of public health beyond the amount of the estimate approved by the county excise board. Under section 8680 of the compiled statutes of 1921 of the state, the compensation to be allowed the county superintendent of public health is fixed and limited to $5 a day for the time actually and necessarily served, and not exceeding the sum total of a certain amount yearly according to the population of the county, and any other compensation allowed is by contract for actual and necessary expenses, in the discharge of his duties, in carrying out the "provisions, rules and regulations" promulgated by such health officer and the board of county commissioners for the suppression of dangerous epidemics in the county. The compensation for expenses provided in the last paragraph of the section for the suppression of dangerous epidemics is not in the nature of an involuntary indebtedness but is voluntary, and grows out of a contractual relation, and any claim not contracted under this provision is illegal and void. Whatever the emergency on account of a dangerous epidemic, the county superintendent of public health and the board of county commissioners are required to act together in formulating such "provisions, rules and regulations," as may be necessary to prevent the spread of the epidemic, and they are given full power to compel submission to their rules and regulations to stamp out or prevent the spread of the epidemic.

The evidence in this case did not show any concert of action on the part of the health official and the county commissioners. Whatever rules and regulations were made were made by the superintendent of health, and the county commissioners passed no resolution and took no action in the matter. But section 8680, in providing for the payment of actual and necessary expenses, requires that they must be such as were contracted for in the discharge of the health official's duties in the emergency. The evidence must show a contractual relation between the parties, there must be rules and regulations agreed on in fixing the duties of the health officer, and there must be a promise to pay for services and expenses incurred. The evidence in this case failed to show any compliance with the statute in these respects. Furthermore, this court cannot see anything mandatory in these provisions of the statute even in the case of an emergency. It is discretionary with the county commissioners as to whether they

take any action or not, even if a dangerous epidemic does exist. If they do act, and, with the superintendent of health, make rules and regulations to meet the danger, even then they cannot contract for expenses beyond the resources of the county and the constitutional limitations of indebtedness. If within such limits, the contract will be legal; otherwise, illegal and void. Wherefore the court is of the opinion that the judgment rendered for the defendant was correct and should be affirmed.

Malpractice Where Radium Copsule Was Swallowed

(Jacobs v. Grigsby et al. (Wis.), 205 N. W. R. 394)

The Supreme Court of Wisconsin, in affirming a judgment for $3,000 damages in favor of the plaintiff, says that one of the defendant copartners used a silver capsule containing radium in treating the plaintiff for a nasal trouble. He first treated the left nostril, but while he was packing the capsule in the right nostril the capsule slipped away from him, dropped into the plaintiff's mouth, and was swallowed. In order to prevent serious injury to the plaintiff by reason of the capsule being swallowed, an operation was immediately performed, and it was for the pain and suffering and damages resulting from that operation that the plaintiff brought this action for malpractice, contending that the physician was negligent because he used too short a string attached to the capsule. It was undisputed that when he treated the left nostril the capsule had attached to it a string 5 or 6 inches in length, but the plaintiff contended that in cutting off the gauze which was used in the packing the physician also cut off the string to a length not exceeding a couple of inches. On behalf of the defendant, it was contended that a string of the ordinary, usual length of 6 or 6½ inches was used. The jury found by a special verdict, the form of which was agreed on by both parties: (1) In giving the plaintiff's right nostril the treatment in question the defendant failed to have attached to the radium capsule a string of the usual and customary length usually employed by physicians in good standing of the same school of medicine and surgery in that city and similar localities, under like or similar circumstances, having due regard to the advanced state of medical and surgical science at the time; (2) such failure to use a string of the usual and customary length attached to the capsule was the proximate cause of the capsule slipping down the plaintiff's throat; (3) the defendant ought, in the exercise of that degree of care and skill usually exercised by physicians in good standing of the same school of medicine and surgery in that city and similar localities, under like or similar circumstances, having regard to the advanced state of medical and surgical science at the time, reasonably to have anticipated that an injury to the plaintiff would be the natural and probable consequence of the failure to use a string of the customary and usual length; and (4) damages in the sum of $3,000.

The questions that controlled this case were: (1) What was the length of the string used by the physician? (2) What is the customary length of string used for the purposes for which this was used? and (3) Could the jury reasonably find that a string not to exceed 2 inches in length was the proximate cause of the injury to the plaintiff? On the question of the length of the string, the testimony was in sharp conflict. The physician who performed the operation to remove the capsule from the plaintiff's stomach testified that the string was 6½ inches in length; that he measured it after removing it. The defendant physician testified that the string was 6¼ inches in length, and that he also measured it after its removal from the stomach. The plaintiff testified that the string was lying on the table after the treatment of the left nostril and that it was only about 1½ inches in length. Two nurses testified that the string was not more than 2 inches long. On this state of the testimony it could not be said that the verdict was without evidence to support it. The length of the string was peculiarly a question for the jury to decide on the conflicting testimony. It was somewhat significant that the string was not produced on the trial. Why it was not the court was not advised.

The testimony of the physician that he used a string about 6½ inches long, and that he followed the usual and customary practice in all that he did, sufficiently established the fact by expert testimony that a string for such a purpose is customarily of a length of about 6½ inches. The contention that the jury could not say that the shortness of the string was the proximate cause of the capsule falling into the plaintiff's mouth and being swallowed was not tenable. The physician testified that he knew the capsule might pass down the nasal passage into the mouth. Knowing that, it seems to the court he should have known that a string only 2 inches long was too short safely to prevent the capsule from so doing. At least the court cannot say that twelve men might not reasonably come to such a conclusion. Nor can the court disturb the verdict as excessive, when, after more than two years, the plaintiff was still suffering more or less pain, probably due to adhesions.

Blastomycosis Resulting Naturally and Unavoidably

(United States Casualty Co. v. Smith (Ga.), 129 S. E. R. 880)

The Court of Appeals of Georgia, Division No. 2, in affirming a judgment which denied the insurance carrier's appeal from an award of compensation under the workmen's compensation act, holds that the industrial commission was authorized to find that the employee was suffering from the disease of blastomycosis, and that it resulted naturally and unavoidably from his original injury. He had had, from a scald, a blister about the size of a nickel form on the back of his neck, which blister was burst and became a sore, a month or so after which the wound was exposed to ammonia gas which enveloped him. He soon began to experience pains in one of his arms; after about two months was never able to work again; at the end of about a year had to have an arm amputated; and four months afterward was informed by a specialist in skin diseases that he was suffering from blastomycosis, a disease caused by a vegetable germ or fungus.

There are decisions which might be construed as holding that the contention of the employee in a case of this sort would not be established in the absence of evidence to show when, where or under what circumstances the germ made its entrance into his person. But, after mature deliberation, this court is unwilling to apply such a rule in this case. The statute, in providing that the disease must have resulted naturally and unavoidably from the accident, does not, this court takes it, abolish the well established proximate cause doctrine, but does define it, the court thinks, so far as it relates to diseases, in compensation cases. The definition, however, does not appreciably change the general rule, and might have been inserted for the purpose of excluding diseases developing in the course of the employment, but not caused by some antecedent injury.

The word "naturally," as here employed, means according to the laws of nature or the usual course of things. It is unimportant that it is unusual for persons to be afflicted with the disease in question, provided it seized the particular person in the way usual to the disease. According to the evidence as to the character, habits and effect of the blastomycosis germ, the employee's contracting of the disease was in accordance with its nature, and it therefore resulted naturally from the accident. Did it also result "unavoidably"? This word is to be given a reasonable interpretation, according to its general acceptation, having in mind the general requirements of the law as to the care and diligence which a person ordinarily must exercise for his own safety and protection. It is not employed in an absolute sense, and does not imply that the disease must follow certainly. A thing is generally considered unavoidable when common prudence and foresight cannot prevent it. The evidence showed that the employee consulted physicians promptly, and was constantly under treatment, and warranted the conclusion that he made every reasonable endeavor to maintain his health from the first appearance of illness. Anyway there would be no presumption of voluntary exposure or lack of care on the part of the employee. The evidence was easily sufficient to establish that he could not have avoided the disease by ordinary care. It was immaterial that neither the employer nor the employee could have known that the particular

disease might result from an accident, since, in the light of modern science and common experience, it could have been reasonably anticipated that a disease of some character would probably result therefrom. The conclusion is that the award in the instant case was authorized.

City Not Liable for Gross Negligence as to Hospital

(Young v. City of Worcester (Mass.), 149 N. E. R. 204)

The Supreme Judicial Court of Massachusetts, in affirming an order sustaining a demurrer to the plaintiff's declaration, says that the plaintiff, as administrator, sought to recover for the death of his intestate, which was alleged to have been caused by a defective elevator in the Worcester City Hospital. The plaintiff very properly conceded that he had no right to recover in damages for the death of his intestate caused by the negligence of the municipality's agents or servants. The maintenance of the hospital by the defendant, while permissive, is a matter of public service conducted exclusively and purely for the general and common good. In some cases the statutes enjoin such service on cities and towns, and in others permit it. When such service has been entered on, there is no good reason why a liability to private action should be imposed when a town or city voluntarily enters on such a beneficial work, and withheld when it performs the service under the requirements of an imperative law. The plaintiff, however, contended that there is a distinction between gross negligence and negligence, and that the admission of gross negligence by the demurrer removed this case from the field covered by the decisions. But the principle which exempts municipalities from responsibility for injuries received in consequence of a negligent or defective performance of a public service is of equal pertinency when the negligent act is greater in culpability than is ordinarily imputed to negligent conduct.

Roentgenograms May Be Used to Refresh Recollection

(Hinkelman v. Pasteelnick (N. J.), 130 Atl. R. 441)

The Supreme Court of New Jersey, in affirming a judgment in favor of the plaintiff for damages for personal injuries, says that the only ground on which a reversal was sought was an alleged error on the part of the trial court in permitting a physician, who was the plaintiff's physician and attended her in the hospital, to look at a roentgenogram, which he was unable to say was a photograph of the plaintiff's leg after her injury, and to testify that an inspection of the plate refreshed his recollection as to the condition of the bones of the plaintiff's foot. The testimony was objected to on the ground that it was improper to permit the physician to refresh his recollection by the use of a photograph that he could not swear was taken of the plaintiff's foot or leg. But the supreme court thinks that the objection was without merit. Anything that will refresh the recollection of a witness may be looked at by him for that purpose, although in itself it is not evidential.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, Dallas, April 19-23. Dr. Olin West, 535 N. Dearborn Street, Chicago, Secretary.

Alabama, Medical Association of the State of, Mobile, April 27-30. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Assistant Secretary.

American Association for the Study of Allergy, Dallas, April 20. Dr. A. H. Rowe, 242 Moss Avenue, Oakland, Calif., Secretary.

American Association of Genito-Urinary Surgeons, Hot Springs, Va., May 10-12. Dr. H. G. Bugbee, 40 E. 41st Street, New York, Secretary.

American Association of Industrial Physicians and Surgeons, Philadelphia, May 24-26. Dr. F. L. Rector, 22 East Ontario Street, Chicago, Secretary.

American Bronchoscopic Society, Montreal, Canada, May 29. Dr. Henry B. Orton, 671 Broad Street, Newark, N. J., Secretary.

American Child Health Association, Atlantic City, May 17-22. Dr. S. J. Crumbine, 370 7th Ave., New York City, Secretary.

American Dermatological Association, Niagara Falls, Canada, May 27-29. Dr. C. Guy Lane, 416 Marlborough Street, Boston, Secretary.

American Gastro-Enterological Association, Atlantic City, May 3-4. Dr. John Bryant, 338 Marlborough Street, Boston, Secretary.

American Gynecological Society, Stockbridge, Mass., May 20-22. Dr. A. H. Curtis, 104 S. Michigan Ave., Chicago, Secretary.

American Laryngological Association, Montreal, Canada, June 3-5. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.

American Laryngological, Rhinological, and Otological Society, Montreal, Canada, May 31-June 2. Dr. Robert L. Loughran, 145 West 58th Street, New York, Secretary.

American Neurological Association, Atlantic City, June 1-3. Dr. Henry A. Riley, 870 Madison Avenue, New York, Secretary.

American Orthopedic Association, Atlanta, April 26-28. Dr. De Forest P. Willard, 1630 Spruce Street, Philadelphia, Secretary.

American Otological Society, Montreal, Canada, May 31-June 3. Dr. Harold Walker, 390 Commonwealth Avenue, Boston, Secretary.

American Pediatric Society, Niagara Falls, Canada, May 31-June 2. Dr. Howard Childs Carpenter, 1805 Spruce Street, Philadelphia, Secretary.

American Psychiatric Association, New York City, June 8-11. Dr. Earl D. Bond, 4401 Market Street, Philadelphia, Secretary.

American Psychopathological Association, New York City, June 11. Dr. Sanger Brown II, 173 East 70th Street, New York City, Secretary.

American Roentgen Ray Society, Detroit, May 18-22. Dr. C. L. Martin, Baylor Hospital, Dallas, Texas, Secretary.

American Society of Clinical Investigation, Atlantic City, May 3. Dr. J. H. Austin, University of Pennsylvania, Philadelphia, Secretary.

American Surgical Association, Detroit, May 24-26. Dr. R. B. Greenough, 8 Marlborough Street, Boston, Secretary.

American Therapeutic Society, Philadelphia, June 10-12. Dr. W. J. Mallory, 1720 Connecticut Ave., N. W., Washington, D. C., Secretary.

American Urological Association, Boston, May 17-19. Dr. H. G. Hamer, 723 Hume-Mansur Building, Indianapolis, Ind., Secretary.

Arizona Medical Association, Globe, April 25-27. Dr. D. F. Harbridge, 407 Goodrich Building, Phoenix, Secretary.

Arkansas Medical Society, Hot Springs, May 18-20. Dr. W. R. Bathurst, 810 Boyle Building, Little Rock, Secretary.

Association for the Study of Internal Secretions, Dallas, April 20. Dr. F. M. Pottenger, Title Insurance Building, Los Angeles, Secretary.

Association of American Physicians, Atlantic City, May 4-5. Dr. F. W. Peabody, Boston City Hospital, Boston, Secretary.

California Medical Association, Oakland, April 26-May 1. Dr. Emma W. Pope, 593 Market Street, San Francisco, Secretary.

Conference of State and Provincial Health Authorities, Atlantic City, N. J., May 21-22. Dr. Richard M. Olin, State Commissioner of Health, Lansing, Mich., Secretary.

Connecticut State Medical Society, New Haven, May 19-20. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

Florida Medical Association, Gainesville, May 3-5. Dr. Shaler Richardson, 111 W. Adams Street, Jacksonville, Secretary.

Georgia, Medical Association of, Albany, May 12-15. Dr. A. H. Bunce, 65 Forrest Avenue, Atlanta, Secretary.

Hawaii Territorial Medical Association, Honolulu, April 25-28. Dr. F. J. Pinkerton, 46 Young Building, Honolulu, Secretary.

Illinois State Medical Society, Champaign, May 18-20. Dr. H. M. Camp, Lahl Building, Monmouth, Secretary.

Iowa State Medical Society, Des Moines, May 12-14. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Kansas City, May 4-6. Dr. J. F. Hasig, 804 Elks Building, Kansas City, Secretary.

Maine Medical Association, Poland Springs, June 10-12. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 27-29. Dr. J. A. Chatard, 1211 Cathedral Street, Baltimore, Secretary.

Massachusetts Medical Society, Springfield, June 8-9. Dr. W. L. Burrage, 182 Walnut Street, Brookline, Secretary.

Medical Library Association, Ann Arbor, Mich., June 8-9. Miss Harriet Wilson, 535 North Dearborn Street, Chicago, Secretary.

Medical Women's National Association, Dallas, April 18-19. Dr. Lena K. Sadler, 533 Diversey Parkway, Chicago, Secretary.

Minnesota State Medical Association, St. Paul, May 17-19. Dr. E. A. Meyerding, 11 W. Summit Avenue, St. Paul, Secretary.

Mississippi State Medical Association, Jackson, May 11-13. Dr. T. M. Dye, McWilliams Building, Clarksdale, Secretary.

Missouri State Medical Association, St. Louis, May 17-20. Dr. E. J. Goodwin, 901 Missouri Building, St. Louis, Secretary.

National Association for the Study of Epilepsy, New York City, June 7-8. Dr. A. L. Shaw, 108B The Albiston, Utica, N. Y., Secretary.

Nebraska State Medical Association, Omaha, May 11-13. Dr. R. B. Adams, McKinley Building, Lincoln, Secretary.

New Hampshire Medical Society, Concord, May 25-26. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.

New Mexico Medical Society, Albuquerque, May 19-21. Dr. C. M. Yater, 310 N. Richardson Avenue, Roswell, Secretary.

North Dakota State Medical Association, Minot, May 25-26. Dr. A. J. McCannell, Minot, Secretary.

Ohio State Medical Association, Toledo, May 11-13. Mr. Don K. Martin, 131 E. State Street, Columbus, Executive Secretary.

Rhode Island Medical Society, Providence, June 3. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.

South Dakota State Medical Association, Aberdeen, May 19-20. Dr. John F. D. Cook, Langford, Secretary.

Tennessee State Medical Association, Memphis, May 11-13. Dr. J. F. Gallagher, Jackson Building, Nashville, Secretary.

Texas, State Medical Association of, Houston, May 24-27. Dr. Holman Taylor, 207½ West 11th Street, Fort Worth, Secretary.

Utah State Medical Association, Salt Lake City, May 6-8. Dr. F. B. Steele, Boston Building, Salt Lake City, Secretary.

West Virginia State Medical Association, Morgantown, May 25-27. Mr. S. O. Neale, 211 Smallridge Building, Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL for a period of three days. No foreign journals are available prior to 1920, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

31: 151-313 (Feb.) 1926

*Hookworm Infestation and Physical Condition of School Children. W. G. Smillie and D. L. Augustine, New York.—p. 151.
*Fasting as Cause of Convulsions. H. Josephs, Baltimore.—p. 169.
*Intracutaneous Tests with Human and Bovine Tuberculin. H. F. Downing and H. L. Higgins, Cincinnati.—p. 178.
*Acute Pyogenic Arthritis of Hip Joint in Infancy and in Childhood. M. P. Cooperman, Philadelphia.—p. 183.
*Coarctation of Aorta: Case. J. W. Bruce and R. Ball, Louisville, Ky. —p. 196.
Chylomicron (Free Fat) Content of Blood in Infants. L. C. Schroeder and E. Holt, New York.—p. 201.
*Index of Refraction of Breast Milk Serum. C. I. Solomon and A. T. Shohl, New Haven, Conn.—p. 218.
*Basal Metabolism After Pneumonia. B. Shick, P. Cohen and I. Beck, New York.—p. 228.
*Trypsin Secretion of Infants. T. Lukacs, Szeged, Hungary.—p. 235.
*Hexylresorcinol in Treatment of Pyelitis of Infancy and of Childhood. W. J. Scott and V. Leonard, Baltimore.—p. 241.
*Polyarthritis in Infant Six Days Old. L. F. Richdorf and W. H. Griffith, Minneapolis.—p. 250.
*Congenitally Acquired Pyelitis. C. E. Conrad, Harrisonburg, Va. p. 254.

Hookworm Infestation of School Children.—Nearly 2,000 children were examined by Smillie and Augustine for hookworm and to determine what effect, if any, its presence had on growth. It was found that heavy hookworm infestation (500 *Necator americanus* or over) causes marked retardation in the normal growth in height and weight and lowers the hemoglobin of children of school age. Light hookworm infestation (from 1 to 100 *Necator americanus*) produces no measurable retardation in the normal development of children of school age, nor is the hemoglobin of this group reduced to a measurable degree. An infestation of twenty-five *Necator americanus* may be considered as the economic base line of cure. An infestation of twenty-five worms or less represents a carrier state, and is not true hookworm disease. Sanitation and education should be relied on to control the hookworm carrier. Hookworm treatment should be used only in cases of hookworm disease.

Fasting as Cause of Convulsions.—Attention is called by Joseph to short fasting periods as a cause of convulsions in children, especially that type of convulsion which is seen at the onset of acute infections. Studies carried out on several of the children who came under observation indicate that these convulsions are probably of hypoglycemic origin. Attention is called to the close association of this type of convulsion with attacks of recurrent vomiting. Ten cases are reported.

Intracutaneous Tuberculin Tests.—Experience in making routine skin tests with human and bovine tuberculin has convinced Downing and Higgins that both bovine and human tuberculin should be employed in routine tuberculin tests, not only to determine the diagnosis of the type of tubercle bacilli present but also to increase the value of the test by detecting cases which would otherwise be missed. In their series, the missed cases would have amounted to 15 per cent of the total tuberculous patients. Evidence from two cases tends to confirm earlier reports that in the first stages of tuberculosis the patient will react to only one type of tuberculin, presumably that of the infecting type, while later the patient reacts to other types (group reaction).

Infectious Arthritis of Hip Joint in Children.—Cooperman summarizes his observations as follows: acute gonococcus infections of the hip joint in the new-born are characterized clinically by early spontaneous dislocations. Immobilization in plaster casts and diathermy are of definite curative value in preventing destruction and relieving the inflammatory reactions. Reduction of the dislocation should be attempted during the acute stage. Vaccines have proved valueless. Streptococcus and staphylococcus infections of the hip joint in older children are characterized by severe constitutional and local reactions. Destruction of the joint is induced by unallayed muscle spasm and extension of the disease through contracting pressures. Incision and drainage and extension and fixation relieve symptoms and prevent progressive destruction of the joint. Intravenous therapy has proved of little value. Children who have recovered from the acute infections should be under observation for at least one year. Deformities frequently have to be corrected or pathologic dislocations reduced.

Coarctation of Aorta.—A case of coarctation of the aorta of the congenital or infantile type is reported by Bruce and Ball. The clinical manifestations were similar to those of intracranial injury caused by birth trauma—intermittent periods of cyanosis, irregular respirations and convulsions.

Index of Refraction of Breast Milk Serum.—A method of determination of the index of refraction of breast milk serum is proposed by Solomon and Shohl by which the addition to breast milk of 11 per cent of water and 20 per cent, or more, of cows' milk may be detected simply, rapidly and accurately.

Basal Metabolism After Pneumonia.—A postinfectious metabolic study was made by Shick, Cohen and Beck in twenty-one cases of pneumonia. There was not infrequently a low basal metabolism which rose to normal in from one to three weeks, occasionally longer, and which was associated with a slow pulse rate. Less frequently, there was a high postinfectious basal metabolism which declined to normal in from two to three weeks.

Trypsin Secretion and Rickets.—Lukacs' work thus far indicates that there seems to be a possibility of a pathogenic relationship between the increased trypsin secretion and some symptoms of rickets.

Hexylresorcinol in Pyelitis.—On the basis of clinical experience with hexylresorcinol in the treatment of pyelitis in children, Scott and Leonard believe that it is at times a distinct addition to therapeutic measures. The striking improvement in the general health and nutrition, frequently observed in children taking hexylresorcinol, does not seem to be entirely dependent on the control of the urinary infection, for it may occur long before there is any noticeable improvement in the local condition and is sometimes the most impressive effect of the treatment. To obtain the best results, treatment should be persistent; the fluid intake should not be increased, and soda should be avoided during the administration of the drug.

Polyarthritis of Intra-Uterine Origin in Infant.—In the case reported by Richdorf and Griffith, the sequence of the appearance of the disease, first in the mother and then in the child, the exclusion of chronic and secondary arthritis by clinical and laboratory methods, the presence of a similar *Streptococcus viridans* in the mother's blood and baby's joint fluid, and the absence of local signs indicating a portal of entry after contact or other infection, point toward an intrauterine infection of the infant through the placenta by the organisms circulating in the mother's blood.

Congenital Acquired Pyelitis.—Three cases, all occurring in girls, are reported by Conrad. In two of the infants, the mothers had had pyelitis during pregnancy. In one of these two cases the mother had had such severe pyelitis that it was necessary to have her in the hospital for treatment during the fifth month of pregnancy. Two of the infants had convulsions, which were quite severe in one. Two of the infants recovered, and the third was much improved when last seen.

American Journal of Ophthalmology, Chicago

9: 81-156 (Feb.) 1926

Epithelial Dystrophy of Cornea: Relation to Endothelial Dystrophy. S. R. Gifford, Omaha.—p. 81.
Central Retinal Hemorrhage, Synchronous with Onset of Menstrual Period. E. N. Neulen, Astoria, Ore.—p. 85.
Mechanism of Accommodation. P. Obarrio, San Francisco.—p. 90.
Studies in Perimetry. I. Diagnostic Scale for Form Field. C. E. Ferree and G. Rand, Bryn Mawr, Pa., and M. M. Monroe, Philadelphia. —p. 95.

Bilateral Glioma of Retina. R. M. Rogers, Brooklyn, N. Y.—p. 105.
Retinoscopy with Cylinders. C. S. O'Brien, Iowa City.—p. 107.
Milk Injections in Ophthalmic Cases. I. E. Gaston, Portland, Ore. —p. 111.
Osteoma of Orbit. J. E. Lebensohn, Chicago.—p. 115.
Retinal Vessel Scotoma. J. N. Evans, Brooklyn, N. Y.—p. 118.
Oil Injections in Treatment of Lacrimal Duct Stenosis. G. M. Bean. —p. 119.
Red Free Light and Fluorescein in Examination of Cornea and Conjunctiva. W. M. Bane, Denver.—p. 120.
Neoplasm of Pituitary Body. W. F. Bonner, Wilmington, Del.—p. 120.

Annals of Clinical Medicine, Baltimore

4: 525-611 (Jan.) 1926

Health and Life: Broadening Conceptions of Tasks of Practicing Physicians. L. F. Barker, Baltimore.—p. 525.
*Heart Disease and Life. S. R. Roberts, Atlanta, Ga.—p. 535.
Pellagra and Beriberi. F. J. Farnell and P. J. Yacovlev, Providence, R. I.—p. 541.
*Typical Pellagra Syndrome Developing in Patient with Chronic Ulcerative Colitis While Under Hospital Treatment. J. M. Barnes, Washington, D. C.—p. 552.
Diseases of Gallbladder. E. Kaplan, Newcastle, Pa.—p. 565.
*Asthma and Eczema Controlled Through Nasal (Sphenopalatine) Ganglion. L. K. Gundrum, Los Angeles.—p. 572.
*Bacteriologic Study of Upper Respiratory Tract in Asthmatics: Selective Pathogenicity. M. Solis-Cohen and A. I. Rubenstone, Philadelphia. —p. 574.
Treatment of Rhus Dermatitis with Poison Ivy Extract. R. O. Clark, Pearl River, N. Y.—p. 591.
*Two Cases of Sudden Death Associated with Fourth Ventricle Tumor. J. W. Shuman, Los Angeles.—p. 595.

Heart Disease and Life.—Roberts believes that a commission to study the rheumatic group of diseases over a period of years is necessary. This will include a field force to study weather, housing, climate, heredity, environment, exposure, air and clothing; and a laboratory study to determine the bacteriology and the conditions of infection. The education of the public on the frequency of heart disease and how the individual ought to live is an important factor. The public is entitled to a public meeting by every medical society. The physician has no right, as a medical leader in his community, to live contrary to the dictates of preventive medicine. Example is greater than precept, and self-denial than self-indulgence. There should be an annual physical examination, not only of the layman, but of the physician himself. The examination should be done at home by a clinician with the clinician's point of view and experience. The local medical society might well have itself examined annually as a form of both wisdom and example.

Pellagra and Chronic Ulcerative Colitis.—Barnes' case yielded nothing new as far as any specific pathologic condition is concerned. The general pathologic findings were identical with those described in other well-studied cases of typical pellagra, but the marked degenerative changes in the central nervous system emphasized by some writers were not present. No evidence of a polyneuritis was found. From the standpoint of etiology, if any one pathologic condition found in this case might be regarded as having some etiologic significance, it would seem to be a severe colitis, which was the earliest, the most constant and most important clinical symptom and, aside from the cutaneous lesions, the most striking pathologic finding. The histologic picture was identical with that of a severe chronic bacillary dysentery, but bacteriologic studies were negative as to the presence of dysentery bacilli.

Nasal Ganglion Injection Controls Asthma.—Gundrum's case was one of so-called inherited or familial asthma. The duration of the asthma was twenty years and of the eczema ten years. The asthma and eczema were controlled by cocainization of the sphenopalatine ganglions but returned as soon as the effects wore off. Injection with 5 per cent phenol in 95 per cent alcohol has up to the present time given complete relief.

Specific Antigen Injection in Asthma.—Twenty-one patients suffering from asthma had pathogen-selective cultures made by Solis-Cohen and Rubenstone from various portions of the upper respiratory tract. Thirteen different micro-organisms grew. *Micrococcus catarrhalis* was present in every case but one. Only one third of the organisms that grew on Löffler's medium also grew in the patient's whole blood. It would seem, therefore, that these asthma patients harbored twice as many organisms that were nonpathogenic for them as organisms that were pathogenic. Such bacterial infection can be overcome only by the restoration of sufficient bactericidal or bacteriostatic power to the patient, which in the markedly lowered resistance of most asthmatic patients can best be aided by the proper injection of the specific antigen required, after recognizable diseased tissue has been removed. The specific antigen may be lacking in vaccine as ordinarily prepared, as the organisms predominating on ordinary culture mediums may be nonpathogenic for the patient, while in such culture the etiologic organism may fail to grow or may be present in comparatively small numbers. The pathogen-selective method of culture picks out the organisms that are pathogenic for the patient and exaggerates their growth, while inhibiting the growth of or destroying organisms that are nonpathogenic for him. Specific vaccine is of maximum efficiency when made chiefly from those organisms which on pathogen-selective culture grow well in the patient's whole, coagulable blood. To be administered properly, the dosage of vaccine should be regulated according to the general, focal and local reactions produced.

Ventricular Tumor Causes Sudden Death.—Shuman has seen two cases of tumor of the fourth ventricle, both in women, aged 29 and 30, respectively, who died suddenly, in the early morning, the only pathologic change of importance shown at necropsy being the ventricular tumor. In both cases symptomatic relief had been obtained by the injection of one-fourth grain (0.016 Gm.) of morphine sulphate some hours previously. One of these tumors was a cyst, the other an ependymal blastoma.

Annals of Surgery, Philadelphia

83: 161-320 (Feb.) 1926

*Cancer of Heart, Secondary to Cancer of Breast by Direct Lymphatic Extension. R. Kapsinow, New Haven, Conn.—p. 161.
*Development of Carcinoma in Scar Tissue Following Burns. F. M. Johnson, Atlanta, Ga.—p. 165.
*Tuberculosis of Breast. J. W. Hinton, New York, and T. C. Lawson, Berkeley, Calif.—p. 170.
*Tuberculosis of Mammary Gland. A. M. Shipley and H. R. Spencer, Baltimore.—p. 175.
Diagnosis and Treatment of Fractures of Skull as Developed in Cincinnati General Hospital. B. N. Carter, Cincinnati.—p. 182.
Partial Neurectomy of Sensory Root of Gasserian Ganglion in Trifacial Neuralgia with Preservation of Corneal Sensation. A. S. Taylor, Peking, China.—p. 196.
*Persistent and Recurrent Hyperthyroidism. F. H. Lahey and H. M. Clute, Boston.—p. 199.
*Osteomyelitis of Sternum. A. O. Wilensky and S. S. Samuels, New York.—p. 206.
Surgery of Gastric and Duodenal Ulcers. G. de Takats, Chicago. —p. 217.
Study of Six Thousand Seven Hundred and Ninety-Seven Surgically Removed Appendixes. S. Warren and A. S. Warren, Boston.—p. 222.
Pyelography in Renal Diagnosis. L. Herman, Philadelphia.—p. 227.
*Etiology of Postoperative Pulmonary Abscess. E. Holman, San Francisco.—p. 240.
Treatment of Traumatic Rupture of Kidney. M. B. Wesson, San Francisco.—p. 246.
Treatment of Obstructions of Upper Ureter and Early Hydronephrosis. C. H. Peck, New York.—p. 260.
Fractures of Head and Neck of Radius. C. W. Cutler, New York. —p. 267.
Late Results in Treatment of Simple Fracture of Femur in Adults. R. V. Grace, New York.—p. 279.

Secondary Carcinoma of Heart.—An unusual case of carcinoma of the heart, secondary to that of the breast, is reported by Kapsinow. The distribution indicates that the growth was a retrograde invasion by direct continuity along the lymphatic channels.

Ulcers and Cancers in Scar Tissue.—Four cases of ulceration occurring in the cicatrix of extensive burns are recorded by Johnson. Of these, three were proved microscopically to be squamous-cell carcinoma, while the fourth was benign in character but clinically precancerous.

Tuberculosis of Breast.—Hinton and Lawson analyze eight cases. The chief point of interest in the history of this condition is pain which was present in five of the eight patients. On physical examination, the five complained of tenderness over the enlargement, which is not usually encountered in cases of malignancy. The axillary lymph glands were found enlarged in three cases. There was little difference in the sides involved, the right side being affected in five cases

and the left in three. The nipple was retracted in one case. The authors did not find the typical "pig skin" appearance over the tumor, which is frequently described. The Wassermann reaction was negative in all cases. A history of trauma was obtained in one case. Physical examination of the chest revealed râles in two cases. Evidence of a previous cervical adenitis was found in two cases. The family history of tuberculosis was negative except in one case. One patient gave a history of having had a dry cough for approximately eight years, without expectoration.

Tuberculosis of Mammary Gland.—Ten cases of mammary tuberculosis, observed in a series of 671 breast cases are reported by Shipley and Spencer. In one case there was a family history of tuberculosis. In one case there was a history of trauma. In five cases there was clinical evidence of preexisting tuberculosis elsewhere. There was an involvement of the cervical lymph nodes in one case and of the axillary nodes in six cases. The lesion was always unilateral, with involvement of the right mammary gland in seven cases, and of the left in three. The lesions were single in five cases, multiple in two, and diffuse in three. The portion of the breast involved was very irregular. There was skin ulceration in three cases, retraction of the nipple in two cases, discharge from the nipple in one, and sinus formation in one. The preoperative diagnosis was tuberculosis in four cases, chronic mastitis in one, and carcinoma in five. There were no deaths in the series.

Persistent and Recurrent Hyperthyroidism.—Following subtotal thyroidectomy, persistence of symptoms of hyperthyroidism, together with persistence of a basal metabolic rate above normal, according to Lahey and Clute, indicates that there still remains a segment of hyperfunctioning gland capable of producing hyperthyroidism. Removal of a very large proportion of this segment by reoperation will, in a majority of instances, bring about a cure. The administration of compound solution of potassium iodide in these cases, even over a period of months, has failed to produce a single cure. The essential factor in the reoperation of these cases is the separation and retraction of the internal jugular vein and the common carotid artery from the thyroid remnant. With this done, any amount of thyroid tissue desired may be removed from the thyroid remnant. Forty-eight patients were seen by the authors.

Osteomyelitis of Sternum.—Wilensky and Samuels report four cases and give a résumé of twenty cases already on record. Among eleven cases, the mortality was 27 per cent.

Etiology of Postoperative Pulmonary Abscess.—Experimental and clinical observations lead Holman to conclude that postoperative pulmonary suppuration probably has its origin less often in the aspiration of blood and mucus than in the setting free of a septic embolus into the blood serum.

Archives of Neurology and Psychiatry, Chicago

15: 151-280 (Feb.) 1926

Oedipus Complex: Its Rôle and Importance. W. McDougall, Cambridge, Mass.—p. 151.
Behavior Origins from Physiologic Point of View. C. M. Child, Chicago.—p. 173.
Behaviorism. Psychology Based on Reflexes. J. B. Watson, New York.—p. 185.
*Sarcomatosis of Brain. B. M. Fried, Boston.—p. 205.
*Parkinsonian States. G. B. Hassin and P. Bassoe, Chicago.—p. 218.
*Psychoses Occurring During Puerperium. E. A. Strecker, Philadelphia, and F. G. Ebaugh, Denver.—p. 239.
*Psychiatric Value of Kuhlmann Tests. J. S. Plant, Newark, N. J.—p. 253.

Sarcomatosis of Brain.—Fried relates the case of a man, aged 33, who suddenly became ill with symptoms of a brain tumor, which could not be localized. He died two months after the onset of the first symptoms; necropsy showed to the naked eye merely a small tumor nodule, but the microscope revealed the widespread presence of tumor cells throughout the entire cerebrum, cerebellum, pons, medulla oblongata and meninges. The growth proved to be composed of small, round cells which showed numerous mitotic figures, and had a perivascular arrangement. The parenchyma and interstitial tissue of the brain showed extensive secondary degenerative changes. Fried is of the opinion that the tumor originated from the adventitial cells of the Virchow-Robin spaces, in other words, from the mesenchymal element of the brain, and it therefore is regarded as a primary sarcoma of the connective tissue of the brain.

Parkinsonian States.—Four cases are reported by Hassin and Bassoe. One was a case of postencephalitic state in a syphilitic patient; one a similar condition following a head injury in a child; one a case of genuine paralysis agitans and one a parkinsonian state in acute epidemic encephalitis. In all four cases, the clinical picture presented features of parkinsonism. In none was the pyramidal system affected, but the changes more or less diffusely involved the basal ganglia and the substantia nigra. In the third case (paralysis agitans), the changes were degenerative only, while in the others—all cases of postencephalitic parkinsonism—they were both degenerative and inflammatory, although the duration (three years) was practically the same in the first three cases. In the authors' opinion it is, therefore, not proper to look on paralysis agitans as an end-result of encephalitis, nor to consider it an equivalent of a postencephalitic syndrome.

Psychoses Occurring During Pregnancy.—Fifty instances of psychoses associated with or following childbirth are discussed by Strecker and Ebaugh. The diagnoses were: manic depressive, 18 cases; toxic exhaustive, 17; dementia praecox, 13; general paralysis, 1, and psychoneurosis, 1, thus clearly establishing the fact that any psychosis may follow childbirth. Hence, the term "puerperal psychosis" does not represent a clinical entity and should not be used.

Psychiatric Value of Kuhlmann Test.—A new age level scale of tests devised by Kuhlmann is described. The results from testing fifty-three children indicate that definite emotional disturbances are with large precision detected through using the Kuhlmann and Terman scales, in such a way as to evaluate the "mental control" element in the former scale.

Archives of Physical Therapy and XRay Radium, Omaha

7: 1-64 (Jan.) 1926

Radiograph as Adjunct to Artificial Pneumothorax. R. G. Breuer, Norton, Kan.—p. 1.
Bronchial Gland Tuberculosis. J. B. Hawes and E. Friedman, Boston.—p. 11.
Physiotherapy in Treatment of Industrial Wounds. F. H. Walke, Shreveport, La.—p. 16.
Radium in Cancer of Mouth. C. W. Hanford, Chicago.—p. 25.

Boston Medical and Surgical Journal

194: 329-380 (Feb. 25) 1926

Three Months on Medical Service. D. O'Hara, Waltham, Mass.—p. 337.
Spontaneous Subarachnoid Hemorrhage: Four Cases. W. Richardson, Boston.—p. 340.
Value of History in Tuberculosis. M. H. Jones.—p. 344.
Case of Urethral Calculus in Child. H. A. Chamberlin.—p. 347.

Florida Medical Association Journal, St. Augustine and Jacksonville

12: 176-204 (Jan.) 1926

Rôle of Calcium. C. F. Arroyo, Tampa.—p. 176.
Duval County Hospital. R. H. McGinnis, Jacksonville.—p. 180.
Roentgen-Ray Diagnosis and Bronchoscopic Treatment of Lung Abscess. W. J. Knauer and W. McL. Shaw, Jacksonville.—p. 183.
Accessory Nasal Sinus Disease. L. C. Ingram, Orlando.—p. 187.
Uterus Acollis with Atresia: Case. S. R. Edwards, Miami Beach.—p. 190.
Looking Backward Over Fifty Years of Health Work in Florida. J. Y. Porter.—p. 190.

Journal of Biological Chemistry, Baltimore

66: 343-946 (Dec.) 1925

*State of Serum Calcium in Experimental Hypocalcemia and Hypercalcemia. A. R. Moritz, Cleveland.—p. 343.
*Blood Changes During Digestion with Special Reference to Urea Formation. S. Morgulis, Omaha.—p. 353.
Colorimetric Method for Determination of p_H of Cerebrospinal Fluid. I. McQuarrie and A. T. Shohl, New Haven, Conn.—p. 367.
Colorimetric Determination of Phosphorus. C. H. Fiske and Y. Subbarow, Boston.—p. 375.
Vitamin Studies. XI. Inorganic Blood Phosphorus and Bone Ash in Rats Fed on Normal, Rachitic and Irradiated Rachitic Diets. R. Dutcher, M. Creighton and H. A. Rothrock, State College, Pa.—p. 401.
Determination of Gases in Blood and Other Solutions by Vacuum Extraction and Manometric Measurement. III. Methemoglobin. D. D. Van Slyke, New York.—p. 409.

Studies of Methemoglobin Formation. D. D. Van Slyke and E. Vollmund, New York.—p. 415.
*Dietary Factors Influencing Calcium Assimilation. VI. Antirachitic Properties of Hays as Related to Climatic Conditions: Effect of Irradiation with Ultraviolet Light. H. Steenbock, E. B. Hart, C. A. Elvehjem and S. W. F. Kletzien, Madison, Wis.—p. 425.
*Fat Soluble Vitamin. XXVI. Antirachitic Property of Milk and Its Increase by Direct Irradiation and by Irradiation of Animal. H. Steenbock, E. B. Hart, C. A. Hoppert and A. Black, Madison, Wis. —p. 441.
*Antirachitic Substances. II. Action of *n*-Butyl Nitrite on Activated Cholesterol and Antirachitic Vitamin. C. E. Bills, Evansville, Ind. —p. 451.
Studies of Cholesterol. I. Synthesis in Animal Body. F. S. Randles and A. Knudson, Albany, N. Y.—p. 459.
*Destructive Action of Acids, Alkalis and Enzymes on Insulin. H. A. Shonle and J. H. Waldo, Indianapolis.—p. 467.
Quantitative Estimation of Tyrosine and Histidine in Protein. M. T. Hanke, Chicago.—p. 475.
Histidine and Tyrosine Content of Number of Proteins. M. T. Hanke, Chicago.—p. 489.
Continuous Dialysis or Extraction Apparatus Which Operates at Reduced Pressure with Constant Volume of Liquid. M. T. Hanke and K. K. Koessler, Chicago.—p. 495.
Alcohol-Soluble Protein Isolated from Polished Rice. W. F. Hoffman, St. Paul.—p. 501.
Relation Between Colorimetric Reading and True *p*H of Serum or Plasma. J. H. Austin, W. C. Stadie and H. W. Robinson, Philadelphia.—p. 505.
*Retention of Uric Acid During Fasting. W. G. Lennox, Boston. —p. 521.
*Effect of Vitamin A Deficiency on Character of Nitrogen Metabolism. A. F. Morgan and D. F. Osborn, Bekeley, Calif.—p. 573.
*Relation Between Amount of Ultraviolet Light Received by Hens and Amount of Antirachitic Vitamin in Eggs Produced. J. S. Hughes, L. F. Payne, R. W. Titus and J. M. Moore, Manhattan, Kan.—p. 595.
Determination of Calcium in Tissues, Feces and Milk. R. C. Corley and W. Denis, New Orleans.—p. 601.
*Effect of Excessive Calcium Ingestion on Calcium Content of Tissues with and Without Ultraviolet Irradiation. W. Denis and R. C. Corley, New Orleans.—p. 609.
Chemical Investigations of Corpus Luteum. IV. Acetone-Soluble Fat. G. F. Cartland and M. C. Hart, Kalamazoo, Mich.—p. 619.
Id. V. Lipoids of Acetone Extract. M. C. Hart and F. W. Heyl, Kalamazoo, Mich.—p. 639.
Formation of Lactic Acid by Depancreatized Dogs. C. J. Weber, A. P. Briggs and E. A. Doisy, St. Louis.—p. 653.
Benzoylated Amino-Acids in Animal Organism. I. Behavior of Hippuric Acid Following Its Oral Administration. W. H. Griffith, St. Louis. —p. 671.
Id. Hydrolysis of Hippuric Acid in Alimentary Canal of Rabbit. W. H. Griffith and P. B. Cappel, St. Louis.—p. 683.
Fate of Sugar in Animal Body. I. Rate of Absorption of Hexoses and Pentoses from Intestinal Tract. C. F. Cori, Buffalo.—p. 691.
Relation of Leg Weakness in Growing Chicks to Mammalian Rickets. A. M. Pappenheimer and L. C. Dunn, Storrs, Conn.—p. 717.
Influence of Insulin Administered Orally and Subcutaneously in Phlorhizin Diabetes. O. H. Gaebler and J. H. Murlin, Rochester, N. Y. —p. 731.
*Method for Determination of Energy Values of Foods and Excreta. F. D. Benedict and E. L. Fox, Boston.—p. 783.
*Excretion of Normal Urine Sugar. N. R. Blatherwick, M. Bell, E. Hill and M. L. Long, Santa Barbara, Calif.—p. 801.
Use of Quinhydrone Electrode for Determination of Hydrion Concentration of Feces. C. S. Robinson, East Lansing, Mich.—p. 811.
Nutritional Requirement of Chicken. VI. Does Chicken Require Vitamin C? E. B. Hart, H. Steenbock and S. Lepkovsky, Madison, Wis.—p. 813.
Ultraviolet Absorption Spectrums of Blood Serum and Certain Amino-Acids. W. Stenstrom and M. Reinhard, Buffalo.—p. 819.
*Effect of Orange Juice on Calcium, Phosphorus, Magnesium and Nitrogen Retention and Urinary Organic Acids of Growing Children. M. S. Chaney and K. Blunt, Chicago.—p. 829.
*Maintenance Values for Proteins of Milk, Meat, Bread and Milk, and Soy Bean Curd. M. S. Rose and G. MacLeod, New York.—p. 847.
Insulin and Phlorhizin Diabetes. II. T. P. Nash, Jr., Memphis.—p. 869.
Effect of Temperature on Acid-Base-Protein Equilibrium: Influence on Carbon Dioxid Absorption Curve of Whole Blood, True and Separated Serum. W. C. Stadie, J. H. Austin and H. W. Robinson. Philadelphia.—p. 901.

Serum Calcium in Experimental Hypocalcemia.—This investigation by Moritz indicates that in a general way a decrease in serum calcium, such as occurs following thyroparathyroidectomy, shows a disproportionately great decrease of the diffusible fraction. But in an increase in serum calcium produced by injection of parathyroid extract (Collip) the ratio of the two did not show consistent changes.

Blood Changes During Digestion.—The experimental results presented by Morgulis furnish evidence that, during the absorption of protein digestion products, the urea nitrogen of the systemic blood frequently increases before the amino-acid nitrogen. Not infrequently a fall in the amino-acid nitrogen of the blood has been found in the early stages of the digestive process. Morgulis believes that these experiments furnish proof of the urea-forming function of the liver in the intact animal.

Antirachitic Properties of Hays.—Steenbock et al. assert that antirachitic properties of hays are related to their exposure to sunlight. Clover hay made with exposure to sunlight showed considerable calcifying power, while the clover hay made in the dark was inactive. Direct irradiation of a milking goat with ultraviolet rays brought about a positive calcium balance even when the animal was receiving the weathered clover, which by itself had no beneficial effect.

Raising Antirachitic Properties of Cow's Milk by Irradiation.—By exposure to the radiations of a quartz mercury vapor lamp, the antirachitic properties of cow's milk were increased eight or more times. Under the same conditions a sample of goat's milk was increased in activity about twenty-four times. This increase in activity can also be induced rather promptly, though to a lesser degree, by direct irradiation of the animal. Attention is called by Steenbock et al. to the beneficial results to be expected from this by dairymen.

Antirachitic Substances.—Results reported by Bills are, that antirachitic vitamin in cod liver oil was destroyed by *n*-butyl nitrite, slowly at room temperature, and rapidly on heating. Some seal oil was found to be inactive, but irradiated cholesterol dissolved in the seal oil was moderately antirachitic. When the irradiated cholesterol was dissolved in cod liver oil and heated with *n*-butyl nitrite, the antirachitic activity was destroyed. These reactions support, but do not prove, the hypothesis that the antirachitic vitamin is identical with the antirachitic derivative of cholesterol produced by irradiation.

Action of Acids, Alkalis and Enzymes on Insulin.—Shonle and Waldo conclude that insulin may be of a true protein structure possessing specific physiologic activity or it may consist of a chemical complex attached to a protein structure. However, when the protein is broken down into slightly smaller units, by either acid, alkali, or enzyme, the physiologic functioning is lost.

Retention of Uric Acid During Fasting.—Measurements made by Lennox of uric acid in blood and urine during twenty-one fasting periods revealed the fact that variations in excretion of uric acid following the use of various purine-free diets do not mean variations in production, but variations in the amounts of uric acid contained in blood and tissues. The observations suggest the use of a low fat diet in the treatment of gout. Disturbance in kidney function and in metabolism of the body both played a part in the retention. Of various possible factors examined, the attending ketosis seemed the most constant. It is probable that various interrelated disturbances in oxidation and in the acid-base equilibrium of the blood and body tissues are involved.

Effect of Vitamin A Deficiency on Nitrogen Metabolism.—A theory is advanced by Morgan and Osborn to account for the differences between the excretion of allantoin and uric acid in normal and vitamin A deficient animals. It is suggested that in the absence of vitamin A, the animal organism fails to produce purine-containing compounds from the ordinary sources, perhaps arginine and histidine, but continues to utilize over again such portions of discarded purine ring-containing substances as are ordinarily excreted in the form of allantoin. The portions of these compounds which are oxidized only to uric acid are apparently no longer usable and continue to be excreted in proportion to the amount of destruction of cellular material in vitamin A deficient animals in the same manner as in normal animals.

Ultraviolet Irradiation of Hen Affects Vitamin Content of Hen's Egg.—It is asserted by Hughes et al. that the amount of ultraviolet irradiation which a hen receives is an important factor in determining the antirachitic vitamin content of the eggs which she produces when her feed is low in the antirachitic vitamin. Eggs which have a low antirachitic vitamin content do not have as high a hatchability as eggs having a high antirachitic vitamin content, other factors influencing hatchability being constant.

Effect of Excessive Calcium Ingestion.—Denis and Corley present evidence to show that rabbits receiving a daily dose of calcium chloride or calcium lactate showed no higher cal-

cium content of the tissues than did the control animals. Daily exposure to ultraviolet rays from a mercury tungsten arc was also without effect on the calcium content of the tissues and serum.

Determination of Energy Value of Foods.—A method has been developed and tested by Benedict and Fox for the indirect determination of the energy values of foods, feeding stuffs and excreta. The functional principle involves the direct measurement of the oxygen consumed during the combustion of a known weight of a substance and the computation therefrom of the potential energy of the substance by means of a series of factors for the calorific value of a liter of oxygen previously established with a bomb calorimeter. The apparatus embodying this principle has been styled the "oxy-calorimeter."

Excretion of Normal Urine Sugar.—Experiments made by Blatherwick et al. show that the addition of glucose to a standing diet causes an increased excretion of fermentable sugar without any significant change in the nonfermentable fraction. These results indicate the chief source of the fermentable sugar to be the main carbohydrate metabolism. The nonfermentable reducing substances appear to be largely dependent on the protein metabolism.

Effect of Ingestion of Orange Juice.—A study was conducted by Chaney and Blunt on two growing girls, aged 10 and 11, respectively, to determine the effect of orange juice on calcium, phosphorus, magnesium and nitrogen metabolism. Calcium assimilation was decidedly benefited when oranges formed a part of the diet, the increased retention being considerably greater than the calcium added in the oranges and greater than might be expected from a stimulus to retention caused by a larger calcium intake. The increase in phosphorus retention was even more marked than that of calcium, more than three times as much phosphorus both in grams and percentage of intake being assimilated when orange juice was added. The magnesium retention was also increased, although to a less marked extent than that of calcium and phosphorus. Nitrogen assimilation was greater when orange juice was ingested, even though the nitrogen intake was not altered. Urinary ammonia was decreased, and urinary p_H and organic acids increased. The increase of organic acids amounted to approximately 7 per cent of the citric acid of the orange juice ingested. A marked increase in the children's weight was observed.

Maintenance Values of Certain Proteins.—The evidence presented by Rose and MacLeod indicates that the nitrogen balance can be maintained with milk, meat, or white bread and milk in amounts to contribute each half of the protein, with a protein intake which is not more than 85 per cent of the average maintenance requirement of adults, but that the efficiency of meat is slightly less than that of milk or bread and milk.

Journal of Experimental Medicine, Baltimore

43: 143-288 (Feb. 1) 1926

Microbic Virulence and Host Susceptibility in Paratyphoid Enteritidis Infection of White Mice. IX. Relationship of Dosage to Mortality Rate, Survival Time and Cage Population. I. W. Pritchett, New York.—p. 143.
Id. X. Relative Susceptibility of Different Strains of Mice to Per Os Infection with Type II Bacillus of Mouse Typhoid (Bacillus Pestis Caviae). I. W. Pritchett, New York.—p. 161.
Id. XI. Seasonal Variation in Susceptibility of Different Strains of Mice to Per Os Infection with Type II Bacillus of Mouse Typhoid (Bacillus Pestis Caviae). I. W. Pritchett, New York.—p. 173.
Relation of Thyroid to Surface Tension of Blood Plasma. I. Effect of Thyroidectomy. C. M. Wilhelmj and M. S. Fleisher, St. Louis.—p. 179.
Id. II. Effect of Administration of Thyroid Extract and Thyroxin. C. M. Wilhelmj and M. S. Fleisher, St. Louis.—p. 195.
*Relation of Bacillus Abortus from Bovine Sources to Malta Fever. T. Smith, Princeton, N. J.—p. 207.
*Agglutination Affinities of Abortus-Melitensis Group of Bacteria with Special Reference to Two Human Strains. M. L. Orcutt, Princeton, N. J.—p. 225.
*Origin of Lepra Cell. J. Oliver, San Francisco.—p. 233.
Effects of Spontaneous Disease on Organ Weights of Rabbits. W. H. Brown, L. Pearce and C. M. Van Allen, New York.—p. 241.
Allergic Irritability. III. Influence of Chronic Infections and Trypan Blue on Formation of Specific Antibodies. P. A. Lewis and D. Loomis, Princeton, N. J.—p. 263.
*Nuclear Inclusions in Testes of Monkeys Injected with Tissue of Human Varicella Lesions. T. M. Rivers, New York.—p. 275.

Relation of Bacillus Abortus from Bovine Sources to Malta Fever.—Two cultures resembling *Bacillus abortus* from cattle, isolated by Smith from human cases of so-called Malta fever, are shown to be in their effect on guinea-pigs not identical with the bovine strains. The results of studies of *B. abortus* from swine indicate a close relation between the porcine strains and the two human strains.

Agglutination Affinities of Abortus-Melitensis Group of Bacteria.—The conclusions drawn by Orcutt from this study are that, while there appears to be evidence of serologic distinctions between *B. abortus* and *B. melitensis* cultures as studied by earlier workers, her experiments show no serologic distinctions among the six strains used in the study. *B. melitensis* II and *B. melitensis* III were found identical with the bovine and swine strains by means of agglutination and agglutinin absorption reactions in unheated serums, by agglutination in heated serums, and with the use of heated cultures in unheated and heated serums.

Origin of Lepra Cell.—By means of the method of vital staining, Oliver found that the lepra cell in rat leprosy is derived from the histocyte. From the similarity in morphology and function of the lepra cells in this condition and those of human leprosy, it seems likely that derivation of the cells in the two conditions is similar.

Nuclear Inclusions in Varicella Lesions.—Eosin-staining nuclear inclusions resembling those deemed characteristic of a certain well known group of filtrable viruses, among which is varicella, were found by Rivers in vervets' testes inoculated with emulsified tissue of human varicella lesions.

Journal of Nervous and Mental Disease, New York

63: 105-208 (Feb.) 1926

*Pupils in Somatic and Visceral Disorders in Association with Referred Pain and Hyperalgesia. J. Byrne, New York.—p. 105.
*Dementia Praecox in Identical Twins. G. H. Parker, Cambridge, Mass.—p. 135.
*Four Cases of Spinal Cord Compression. S. Rothenberg, Brooklyn.—p. 143.

Pupils in Somatic and Visceral Disease.—As the result of his observation, Byrne urges that the study of the pupils in association with referred and reflected pain and hyperalgesia should be made an integral part of all routine physical examinations. Byrne avers that the areas of reflected pain and hyperalgesia described by Head require revision and amendment, and the Dejerine or Klumpke-Dejerine sign in injuries of the spine about the thoracicocervical junction needs reevalution.

Dementia Praecox in Twins.—The conclusion is reached by Parker that dementia praecox is germinal in origin; that it is a mendelian recessive as compared with the normal state. The occurrence of this disease in one of a pair of twins should lead the attending physician to an immediate examination of the other twin.

Spinal Cord Compression.—Significant in the symptomatology of the four cases reported by Rothenberg was the rapid development of the compression, and the infrequency of pain as a prominent symptom. The compression in these cases was due to: osteomyelitis, *Cysticercus cellulosae* infectoin, endothelioma and Hodgkin's disease.

Journal of Urology, Baltimore

15: 111-218 (Feb.) 1926

*Effect of Diuretics on Transplanted Kidneys. J. K. Holloway, Rochester, Minn.—p. 111.
*Etiology of Calcareous Pyelonephritis. B. H. Hager, Madison, Wis.—p. 133.
Primary Papillary Epithelioma of Renal Pelvis: Case. W. W. White and C. O. Ritch.—p. 143.
Study of Urinary Tract in Necropsy Specimens. A. E. Goldstein and W. J. Carson, College Park, Md.—p. 155.
Phleboliths. J. M. Culligan, Rochester, Minn.—p. 175.
Urinary Regurgitation and Renal Colic. B. Lewis, St. Louis.—p. 189.
*Effect of Section of Both Sacral Nerves on Intravesical Pressure. J. C. Potter, Rochester, Minn.—p. 197.
*Cavernous Hemangioma of Bladder. H. Katz, Chicago.—p. 201.
Bacterial Cystitis in Female. W. T. Briggs, Lexington, Ky.—p. 209.

Effect of Diuretics on Transplanted Kidneys.—A series of experiments was performed by Holloway on dogs in an attempt to determine the effect of diuretics, injected intra-

venously, on autogenous and homogenous kidney transplants. The functional activity and also the secretion of autogenous transplants are apparently similar, if not identical, to those of a normal kidney. The effect of diuretics is the same as on a normal kidney. Viability is maintained indefinitely, likewise function. Homogenous transplants maintain only a transient viability, and their functional activity is usually short-lived. As long as homogenous transplants remain viable, they function in a manner similar to autogenous transplants. They tend to eliminate urine which in most respects is similar to urine secreted by normal kidneys. As a rule, however, the early appearance of albumin, red blood cells and pus denotes marked parenchymatous changes in the kidney. While functioning, the homogenous transplant tends to respond to a diuretic in very much the same manner as does a normal kidney, except that diuresis is not so marked or so prolonged. Loss of function and lack of response to diuretics are apparently directly in proportion to pathologic changes within the transplanted kidney. When function has ceased, the introduction of a diuretic is without effect.

Etiology of Calcareous Pyelonephritis.—Hager reports a case of calcareous pyelonephritis from which he was able to isolate *Salmonella ammoniae*. The data obtained from this case agree with chemical and experimental data obtained from the study of alkaline encrusted cystitis and offer an explanation of the etiology of calcareous pyelonephritis.

Effect on Bladder of Section of Sacral Nerves.—By means of experiments on dogs, Potter shows that section of both sacral nerves does not affect the vesical tone or the mechanism of micturition; nor does it cause retention of urine or reflux up the ureter.

Cavernous Hemangioma of Bladder.—Ten cases of cavernous hemangioma of the bladder are recorded in the literature. Of these, three were confirmed by microscopic examination. Another case is reported by Katz, which was verified by necropsy and microscopic examination. Treatment is immediate operation and cauterization.

Kentucky Medical Journal, Bowling Green

25: 81-114 (Feb.) 1926

Intravenous Medication. W. R. Burr, Auburn.—p. 83.
Radiotherapy in Cancer of Breast. J. Paul and D. Y. Keith, Louisville. —p. 86.
So-Called Keratoderma Blennorrhagica: Case. C. B. Willmott, Louisville.—p. 90.
Cerebral Traumatism. J. G. Sherrill, Louisville.—p. 91.
Conservative Treatment of Head Injuries. H. H. Hagan, Louisville. —p. 94.
Prostatotomy: Case. S. C. McCoy, Louisville.—p. 97.
Scarlet Fever: Case. C. A. Eckler, Dry Ridge.—p. 98.
Tests for Excretory Function of Kidney. F. C. Askenstedt, Louisville. —p. 98.
Lymphosarcoma of Tonsil: Migraine with Hemianopsia. S. C. Dabney, Louisville.—p. 102.
Intracranial Hemorrhage in Infant. B. C. Frazier, Louisville.—p. 107.
Analysis of One Hundred Radium Cases. C. D. Enfield, Louisville. —p. 108.

Medical Journal and Record, New York

123: 213-280 (Feb. 17) 1926

Relations Between Physician and Patient. M. Einhorn, New York. —p. 213.
Intracranial Hemorrhage in New-Born. A. S. Maclaire, New York. —p. 215.
Soft Palate as Place for Signs of Disease. P. Neuda, Vienna.—p. 219.
External Respiratory Mechanism in Injury and Disease. J. Byrne, New York.—p. 220.
Insect Bites as Cause of Heart Disease. G. A. Stephens, Swansea, Wales.—p. 224.
Large Intestine and Vagus Sympathetic Action by Atropine and Eserine. S. D. Ludlum and E. McDonald, Philadelphia.—p. 228.
Toothbrush. O. T. Osborne, New Haven, Conn.—p. 230.
City Enforcement of Drug Laws. S. D. Hubbard, New York.—p. 231.
Use of Sodium Iodide Intravenously in Infections and Allergies. J. W. Wiltsie, Binghamton, N. Y.—p. 235.
Nonspecific Protein Therapy in Pelvic Infections. J. Jarcho, New York. —p. 237.
Obstetrics and Future. H. Thoms, New Haven, Conn.—p. 239.
Extra-Uterine Abdominal Pregnancy. C. S. Wachs, Philadelphia.—p. 241.
Urology in Female. T. J. McBee, Morgantown, W. Va.—p. 242.
Treatment of Uncomplicated Gonorrhea in Female. H. W. Martin, Los Angeles.—p. 246.
Early Signs of Pregnancy. L. Drosin, New York.—p. 248.
Glucose as an Oxytocic. M. P. Rucker, Richmond, Va.—p. 252.
Importance of Previous Labors in Obstetric History. M. Rosensohn, New York.—p. 253.

Nebraska State Medical Journal, Norfolk

11: 49-88 (Feb.) 1926

Treatment of Different Types of Tachycardia. A. L. Smith, Lincoln. —p. 49.
Ectopic Gestation. H. Melerian, Plainview.—p. 54.
Conditions Affecting Practice of Medicine. F. B. Young, Gering.—p. 60.
Nutrition. 11. Acid-Base Equilibrium with Reference to Pediatrics. II. V. E. Levine, Omaha.—p. 66.
Suppurative Parotitis. J. S. Welch, Lincoln.—p. 73.
Control of Postoperative Tonsillar Hemorrhage. J. C. Tucker, Beatrice. —p. 75.
Medical Meetings. C. L. Hustead, Falls City.—p. 77.

Northwest Medicine, Seattle

25: 57-110 (Feb.) 1926

*Importance of Routine Wassermann Test in Private Practice. R. Fitz, Boston.—p. 57.
Infection with Parasite of Syphilis. H. M. Greene, Portland.—p. 62.
Syphilis of Aorta. J. B. Herrick, Chicago.—p. 65.
*Symptoms of Ureteral Stricture. A. H. Peacock and R. F. Hain, Seattle.—p. 72.
Recognition and Treatment of Urinary Infection. W. F. Braasch, Rochester, Minn.—p. 76.
Diagnosis of Late Cutaneous Lesions of Syphilis. H. Odland, Seattle. —p. 81.
*Abuse of Vasotomy. G. S. Morgan, Astoria.—p. 83.
Tuberculosis of Kidney. S. Bozorth, Portland.—p. 84.
*Trauma and Tuberculosis of Kidney in Diabetic. H. W. Howard and J. LeCoque, Portland.—p. 88.
Stricture of Esophagus: Case. P. W. Spickard, Seattle.—p. 90.
Congenital Stenosis of Esophagus: Two Cases. J. H. Fitzgibbon, Portland.—p. 94.
Biologic Method (Aluminum-Potassium-Nitrate Solution) of Treating Chronic Suppurations. M. Thorek, Chicago.—p. 95.

Importance of Routine Wassermann Test.—Fitz reports an analysis of the histories of 350 unselected private patients with a view to determining the occurrence of syphilis in private practice, and in order to illustrate the diagnostic importance of a routine Wassermann test. Of these patients approximately 5 per cent were suffering from some form of syphilis. An underlying syphilis was present in at least 80 per cent of the cases with strongly positive Wassermann reactions. Therefore, the Wassermann test was of great diagnostic importance.

Ureteral Stricture.—Peacock and Hain present the results of a study of 100 cases and give a synopsis of fifty cases of ureteral stricture.

Vasotomy.—Vasotomy, in Morgan's opinion, is a logical and valuable form of therapy in certain cases, especially those of recurrent epididymitis and gonorrheal arthritis, but, he says, it should be performed only by one whose technic is not only perfect but whose judgment is excellent.

Trauma and Tuberculosis of Kidney.—Two features are stressed by Howard and LeCoque in the report of their case: First, trauma appears to have been a factor in the localization of tuberculosis in the kidney, and, second, a fistula developed between the pelvis of the kidney and the skin through Petit's triangle.

Quarterly Review of Biology, Baltimore

1: 1-136 (Jan.) 1926

Biology of Mammalian Testis and Scrotum. C. R. Moore, Chicago. —p. 4.
Symbiosis Among Animals with Special Reference to Termites and Their Intestinal Flagellates. L. R. Cleveland, Boston.—p. 51.
Experimental Studies on Morphogenesis in Nervous System. S. R. Detwiler, Cambridge, Mass.—p. 61.
Review of Discovery of Photoperiodism: Influence of Length of Daily Light Periods on Growth of Plants. K. F. Kellerman, Washington, D. C.—p. 87.
Recent Discoveries in Biology of Ameba. A. A. Schaeffer, Lawrence, Kan.—p. 95.

Wisconsin Medical Journal, Milwaukee

25: 57-106 (Feb.) 1926

Periodic Examinations of Presumably Healthy Persons. J. E. Reichert, West Bend.—p. 57.
Renal Tuberculosis. E. M. Medlar, Madison.—p. 59.
Significance of Late Results of Surgical Treatment. W. E. Fairfield, Green Bay.—p. 63.
Compensation for Loss of Vision Due to Industrial Diseases or Injuries. N. M. Black, Milwaukee.—p. 67.
Psychoneuroses: Heredity and Environment Influences. M. Q. Howard, Wauwatosa.—p. 70.
Radium Treatment of Uterine Fibroids: One Hundred and Ten Cases. L. D. Quigley, Green Bay.—p. 74.
Immunity Against Tuberculosis in Childhood. G. R. Ernst, Milwaukee. —p. 76.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, Liverpool

20: 1-143 (Feb. 11) 1926

*Development of Onchocerca Volvulus in Simulium Damnosum. D. B. Blacklock.—p. 1.
*Development of Hookworm Larvae. I. P. A. Maplestone.—p. 49.
Breeding Anopheline Mosquitoes in and Around Freetown, Sierra Leone. D. B. Blacklock and A. M. Evans.—p. 59.
Cultivation of Endameba Ranarum. H. P. Barret and N. M. Smith.—p. 85.
Morphology of Motile and Encysted Endameba Ranarum in Culture. W. H. Taliaferro and A. B. Fisher.—p. 89.
Freetown Mosquitoes: New and Little-Known Species. A. M. Evans.—p. 97.
Mouth Parts, Alimentary Tract and Salivary Apparatus of Female in Phlebotomus Papatashii. S. Adler and O. Theodor.—p. 109.
*Case of Porocephalosis. D. Riding.—p. 143.

Onchocerca Volvulus Infection. — *Onchocerca volvulus* infection is common in the Konno district of the protectorate of Sierra Leone. Larvae of this parasite were found by Blacklock in the skin of 45 per cent of persons examined systematically. A definite relationship between diseases of the skin or diseases of the eyes and the infection with *O. volvulus*, as judged by the presence of larvae in the skin, could not be established. Dissection of wild insects showed: (*a*) in 780 dissections of the gut an infection of 2.6 per cent with larvae morphologically identical with those of *O. volvulus;* (*b*) in 1,320 dissections of the thorax, a larval infection of over 1 per cent.

Development of Hookworm Larvae.—The evidence presented by Maplestone tends to show that sea water and sea sand per se have no effect in preventing the development of hookworm eggs and larvae.

Porocephalosis.—In the liver of a Sudanese man who died from pulmonary tuberculosis, Riding found several encysted larvae of *Porocephalus armillatus* and also eight similar cysts in the submucosa of the duodenum. No free nymphae were noticed in the peritoneal cavity, and no encysted larvae were found in the lungs. The parasite was not the immediate cause of death; the possibility that the destructive action of the parasite in the lungs predisposed to the development of the tubercular infection was considered, although no encysted larvae were found in these organs.

British Journal of Dermatology and Syphilis, London

38: 47-100 (Feb.) 1926

Bowen's Dermatosis. P. L. Bosellini.—p. 47.
Voltaire on Syphilis. J. D. Rolleston.—p. 64.

British Journal of Radiology, London

31: 45-80 (Feb.) 1926

Saturation Method in Roentgenotherapy, as Applied to Deep Seated Malignant Disease. G. E. Pfahler.—p. 45.
Treatment of Fifteen Cases of Operable Carcinoma of Breast by Radium and Roentgen Rays. J. H. D. Webster, J. P. Thierens and F. G. Nicholas.—p. 59.
Effect on Tuberculosis of Bones and Joints of Food Exposed to Ultraviolet Radiations. C. L. Pattison.—p. 65.
Some Effects of Mercury Vapor Arc Baths on Blood. R. G. Bannerman.—p. 71.

British Medical Journal, London

1: 311-358 (Feb. 20) 1926

Orthopedic Aspects of Chronic Arthritis. R. B. Osgood.—p. 311.
*Phrenic Evulsion as Aid to Treatment of Pulmonary Tuberculosis and Bronchiectasis. H. M. Davies.—p. 315.
Full-Time Ovarian Fetation: Child Dead. L. E. Acomb and T. I. Candy.—p. 320.
Disappearing Diseases. C. E. S. Flemming.—p. 321.
Prediverticular State and Diverticulosis. S. Barling.—p. 322.
*New Occupational Bursa on Tibia ("Dustman's" Bursa). W. M. Eccles.—p. 323.
*Blood Sugar in Case of Addison's Disease. E. F. Chapman.—p. 323.
Rash Following Barbitone-Sodium. P. W. Mathew.—p. 323.
Saccharin in Dispensing. T. W. Preston.—p. 334.

Phrenic Evulsion in Pulmonary Tuberculosis.—Davies has performed phrenic evulsion twenty times: (1) For the purpose of arresting the disease, 3 times; (2) to assist in controlling disease, 4 times; (3) as an accessory during artificial pneumothorax treatment, 5 times; (4) for the treatment of symptoms, 2 times; (5) as a preliminary to thoracoplasty, 4 times; (6) as a preliminary to the radical treatment of a tuberculous empyema, 2 times.

Occupational Bursa on Tibia.—Eccles says that a dustman not infrequently has a short ladder by the side of his dust cart, and that he mounts two or three rungs of this, and then leans with the upper third of his tibia against one of the higher rungs. In the case reported, the man had an adventitious bursa on the left leg, while on the right leg the skin was roughened at the site where the intermittent pressure had been applied.

Blood Sugar Curve in Addison's Disease.—The blood sugar curve in the case of Addison's disease reported by Chapman was remarkably flat, in accordance with a raised tolerance for glucose.

Calcutta Medical Journal

20: 177-216 (Nov.) 1925

Urea Stibamine in Kala-Azar: Sixteen Cases. N. C. Mitra.—p. 177.
Retinal Hemorrhage in Kala-Azar. B. N. Bhaduri.—p. 186.

Indian Medical Gazette, Calcutta

61: 1-52 (Jan.) 1926

Cholera in Punjab in 1925. C. A. Gill.—p. 1.
Outbreak of Cholera at Goalundo Chat. W. J. Marshall.—p. 4.
*Occurrence of Urticaria in Treatment of Malaria by Quinine. T. A. Hughes.—p. 7.
Malaria in Agency Tracts, Madras Presidency. J. Dhairyam.—p. 9.
*Species of Trichomonas (Pentatrichomonas) Prevalent in Calcutta. B. M. Das Gupta.—p. 10.
Soil Acidity and Survival of Hookworm Larvae. L. F. Hirst.—p. 14.
Id. A. C. Chandler.—p. 17.
Some Predisposing Factors in Asthma. M. A. K. Iyer.—p. 18.
Snake-Bite Treated with Antivenomous Serum. L. A. P. Anderson.—p. 19.
Case of Kala-Azar in Simla Hills. B. J. Bouche.—p. 20.
*Foreign Body in Pelvis. K. M. Nayak.—p. 21.
*Case of Hirudiniasis of Male Urethra. P. N. Mitra.—p. 22.
Anthrax Contracted from Handling Infected Beef. A. K. Mukerji.—p. 22.
Case of Bilateral Dislocation of Lens. A. H. Driver.—p. 23.
Expulsive Hemorrhage in Cataract Operations in Rural Practice. K. B. Isbrain.—p. 24.
Case of Severe Abdominal Injury. R. K. Basu.—p. 24.
Case of Strangulated Inguinal Hernia. H. C. Gupta.—p. 25.
Vagaries of Malaria: Hepatic Type. A. Bayley-De Castro.—p. 25.
Gastro-Intestinal Type of Malaria: Five Cases. M. H. Jhaveri.—p. 26.
Sensitiveness to Meat: Induced Immunity. P. N. Mitra.—p. 26.
Synovitis Treated by Iodine Intravenously. K. N. Chatterjee.—p. 26.

Quinine Causes Urticaria.—Two cases are recorded by Hughes in one of which quinine, given in the treatment of malaria, produced a marked urticarial eruption all over the body, while in the other it aggravated a generalized urticaria already existing as a result of a malarial attack.

Pentatrichomonas Prevalent in Calcutta.—In twenty-three cases examined by Gupta the prevalent type (or genus or subgenus) of human intestinal trichomonad was *Pentatrichomonas ardin-delteili* (Derrieu and Raynaud), 1914. This confirms a previous similar finding by Chatterji (1917) and appears to afford evidence that *Pentatrichomonas* is a parasite with a tropical distribution, whereas *Trichomonas*, sensu strictum, is a parasite rather of temperate zones.

Foreign Body in Pelvis.—Nayak reports the case of a woman who consulted him for a swelling on the right side, immediately above and behind the highest point of the crest of the ilium. No information could be got regarding the previous history, so the diagnosis lay provisionally between a suppurating hematoma and a tubercular abscess of the spine pointing in the iliac region. The swelling was incised. Nearly 2 ounces (59 cc.) of curdy matter tinged with blood was evacuated; the cavity was irrigated and just before being closed was explored with the finger. The cavity was retroperitoneal and its floor was formed by the iliac bone. At the bottom, a small hard pointed object like a spicule of bone was striking against the tip of the finger. On removal this proved to be a piece of coconut broomstick, 4 inches (10 cm.) long. The patient then admitted that the piece of wood had been introduced par vaginum to induce abortion. Instead of pushing it into the uterus, she pushed it the wrong way outside of the cervix, pierced the vaginal wall and sent it right home into the right pelvic wall.

Hirudiniasis of Male Urethra.—Mitra's patient was standing knee-deep in water without any clothes on, when he

noticed a leech entering his external meatus urinarius. He tried to pull it out but the leech slipped inside. From then on he was unable to pass any urine and blood dripped from his urethra. Some strong salt solution and epinephrine were injected into the bladder. Two days later the leech was passed with violent colicky pains. It was killed by the salt solution. It measured 4 inches by ½ inch; the mouth and anus were open, and dark granular blood could be pressed out of its abdomen.

Indian Medical Record, Calcutta

45: 1-24 (Jan.) 1926

Infectiousness of Kala-Azar and Its Control. A. C. Chatterjee.—p. 1.
Nonspecific Therapy. A. Roy.—p. 15.
Causes of Rise of Temperature After Childbirth: Treatment. C. C. Pal.—p. 19.

Journal of Mental Science, London

72: 1-169 (Jan.) 1926

Endogenous and Exogenous Factors in Character Formation. G. A. Auden.—p. 1.
Myth of Unconscious Mind. J. S. Bolton.—p. 25.
Story of Central Mental Hospital, Tanjong Rambutan, Federated Malay States. W. F. Samuels.—p. 39.
Some Aspects of Sociology and Their Psychiatric Application. I. D. Suttie.—p. 49.
Phosphorus and Calcium Content of Blood Plasma and Cerebrospinal Fluid in Psychoses. H. A. Scholberg and E. Goodall.—p. 51.
Cerebrospinal Fluid in Lethargic Encephalitis. A. Hancock.—p. 58.
Cholesterol Control of Cerebrospinal Fluid in Certain Mental Diseases. E. G. T. Poynder and J. Russell.—p. 62.
Acquired Immunity to Malarial Inoculation. J. E. Nicole and J. P. Steel.—p. 66.
Incubation Period of Benign Tertian Malaria. G. de M. Rudolph.—p. 69.
Fecal Acidity in Insane Epileptic. G. Cobb.—p. 83.
Treatment by Hypnotic and Hypnoidal Methods of Extern Cases. J. J. Fitzgerald.—p. 85.
Circulation of Hands in Primary Dementia. P. B. Mumford.—p. 90.

Journal of Oriental Medicine, Dairen, Southern Manchuria

4: 15-24 (Jan.) 1926

Pharmacologic Action of Epinephrine on Pupils of Rabbit After Extirpation of Superior Cervical Ganglion. R. Tsukamoto.—p. 15.
Action of Insulin on Protein Metabolism of Rabbits Fed on Thyroid. H. Senga.—p. 16.
Normal Histology of Coronary Arteries: Beginning Sclerotic Changes, Especially in Acute Infectious Diseases. K. Hiyeda.—p. 17.
Basal Metabolism in Beriberi. H. Senga and Y. Yasutomi.—p. 18.
Experimental Arteriosclerosis. M. Imai.—p. 19.
Case of Hysteria with High Temperature. T. Aoki.—p. 19.
Anesthetic Action of Paranesins. T. Okanishi.—p. 20.
Osmotic Pressure of Spinal Fluid. J. Kaneko.—p. 21.
Roentgen-Ray Study of Child's Skull. II. K. Okashima.—p. 22.

Journal of Tropical Medicine and Hygiene, London

29: 41-52 (Feb. 1) 1926

Study of Endameba Blattae (Butschli, 1878) Leidy, 1879, Found Parasitic in Intestine of Blatta Orientalis in England. J. G. Thompson.—p. 41.
Morphologic and Cultural Investigation of Vibriothrix Zeylanica Castellani. M. Peruzzi.—p. 44.
Biochemical Reactions of Certain Fungi: Monilia Krusei, M. Macedoniensis and M. Tropicalis. E. C. Spear.—p. 47.
Acquired Immunity to Malarial Inoculation. J. E. Nicole and J. P. Steel.—p. 48.

Kenya Medical Journal, Nairobi, East Africa

2: 275-298 (Jan.) 1926

Mosquito Breeding Areas Within Nairobi Municipal Area: Waters Containing Anopheline Larvae. V. G. L. van Someren and H. S. De Boer.—p. 277.

Lancet, London

1: 323-376 (Feb. 13) 1926

Pseudohermaphroditism and Hypospadias: Surgical Treatment. A. Edmunds.—p. 323.
Right Iliac Fossa Pain. H. W. Carson.—p. 328.
Celiac Disease. R. Miller.—p. 330.
*Familial Telangiectasia. C. F. T. East.—p. 332.
*Carcinoma of Prostate. A. C. Morson.—p. 335.
Abscess and Gangrene of Lung. T. P. Williams.—p. 336.
*Scopolamine-Morphine Narcosis in Childbirth: One Hundred Cases. E. C. Plummer.—p. 338.
*Case of "Lag" Glycosuria. E. M. Watson.—p. 339.
Case of Traumatic Supraclavicular Adenitis. F. Bodman.—p. 340.
Floating Hepatic Lobe: Case. A. J. E. Cave.—p. 340.

Familial Telangiectasia.—The marked symptom of multiple familial facial telangiectases is epistaxis, coming from the lesions in the nose or bleeding from similar lesions elsewhere. East gives an account of a family in which eleven members in three generations were affected. Only four persons, in two generations, remained free from the disease. In a second family, fifteen out of thirty persons were affected. In a third family, mother and daughter, each an only child, were affected. The latter's five children died young but were free from the disease. The condition appears equally in males or females, but is transmitted rather more often by females. Only six of the twenty-eight cases reported by East were in males.

Operation for Carcinoma of Prostate.—The principles which underlie the operation devised by Morson differ in no material respect from Young's, except that the approach to the gland is from above—suprapubically. All the tissues which form the base of the bladder as far back as the inter-ureteric bar and the anterior wall of the rectum are removed.

Scopolamine-Morphine Narcosis in Childbirth.—Provided that the dosage is limited to the production of amnesia only, and is adjusted to the individual, Plummer cannot see any contraindications to scopolamine-morphine narcosis in childbirth. The constant supervision that is essential makes it unsuitable, however, save in exceptional circumstances, for administration in the patient's own home. In hospitals, it is difficult to insure quiet. Full chloroform anesthesia may be given at any time for such procedures as version or rotation of an occipitoposterior presentation, the scopolamine-morphine being continued afterward, if necessary; or for a terminal forceps extraction, or perineal repair. One great advantage of this procedure is that as the mother is conserving her strength by sleeping, instead of getting worn out by repeated pains and the constant dread of more and worse ones, patients can be left much longer to Nature than would otherwise be possible; in uncomplicated cases the use of forceps merely for the mother's sake is avoided, with consequent lessened risk for mother and child.

"Lag" Glycosuria.—The chief characteristics of the "lag" type of blood-sugar curve are a rapid rise to a maximum of 0.22 or 0.23 per cent in half an hour, followed by an abrupt decline to normal. There is a concurrent glycosuria. The case described by Watson emphasizes the importance of the glucose tolerance test in throwing light on glycosurias of uncertain origin, and also suggests that cognizance should be taken of a possible relationship between the emptying time of the stomach and the distortion of the carbohydrate metabolism in cases of the "lag" type.

Medical Journal of Australia, Sydney

1: 121-146 (Jan. 30) 1926

Some Early Australian Doctors. E. S. Jackson.—p. 121.
*Acute Nephritis in Children: Renal Efficiency Tests. R. Southby and B. L. Stanton.—p. 127.
Complete Transposition of Viscera. A. T. Edwards.—p. 133.

Acute Nephritis in Children.—Southby and Stanton analyze the histories of 103 cases of acute nephritis in children. Twenty-nine children gave a history of having had a sore throat; seventeen children had impetigo; eleven had had pneumonia; fifteen had suffered from measles; in twenty-seven, no etiologic factor was ascertainable. Of the remaining patients, two had had influenza; one had a profuse purulent nasal discharge and was suffering from scabies, with severe secondary infection of the skin. The authors assert that the majority of children suffering from acute nephritis recover completely. Diet is unimportant in influencing the total duration of the illness. Complete rest is important in the treatment.

Okayama Medical Journal, Okayama, Japan

1-118 (Jan.) 1926

Pharmacologic Studies on Peripheral Motor Innervation of Bladder of Mammals. M. Yamauchi.—p. 1.
Ceratocephale Osawai. S. Oinuma.—p. 20.
Thiosulphate Test of Kidney Function. S. Ryoji.—p. 39.
Herpes. I. I. Ehara.—p. 61.
Physical Measurements of Persons with Atonic Stomachs. H. Suga, N. Terao and M. Oka.—p. 72.
Suture of Vas Deferens. M. Sato.—p. 79.
Effect of Roentgen Ray on Digestive Organs. T. Takeda and K. Yuen.—p. 95.

Annales de Médecine, Paris

18: 327-406 (Nov.) 1925

*Tabes Plus Parkinson's Disease. M. G. Marinesco.—p. 327.
*Aspects of Heredity of Tuberculosis. R. Debré and M. Lelong.—p. 347.
Suppurations from Typhoid and Paratyphoid A and B Bacilli. P. Ribierre and V. de Lavergne.—p. 374.
Lambliasis of Biliary Apparatus. M. Labbé et al.—p. 386.
Case of Onychomycosis. L. Bernard et al.—p. 396.

The Lesions in Associated Tabes and Parkinson's Disease.—Marinesco reports a case of tabes associated with Parkinson's disease in a man, aged 47. Necropsy showed the characteristic lesions of tabes, in the lumbosacral region of the spinal cord. There was also considerable destruction of cells in the substantia nigra, with sclerosis and lymphocyte infiltration of the arteries; evident also in the cerebellar peduncles, less in the pons and medulla. These cerebral parenchymal and vascular lesions were similar to those in the roots and meninges of the lumbosacral region. Evidently all these lesions were caused by the same spirochete; its localization in the midbrain had entailed Parkinson's disease; while in the spinal cord it had caused tabes. In eight cases of Parkinson's disease and ten of postencephalitic parkinsonism, the locus niger was always affected. Marinesco refers to Tretiakoff who considers not only the red nucleus but also the substantia nigra as centers controlling the muscular tonus.

Is There Heredity of Tuberculosis?—Debré and Lelong assert that thorough observation, necropsies, microscopic examinations, and inoculations seem to testify that no contamination with tubercle bacilli is possible by way of the placenta; nor is there inheritance of a tuberculous soil. The doctrine of heredity of tuberculosis, they say, is based not on facts, but on impressions. They can find no evidence to sustain them.

Bulletin de l'Académie de Médecine, Paris

95: 119-142 (Feb. 9) 1926

Spirochetes and Gangrene of Lung. F. Bezançon and Etchegoin.—p. 124.
*Arsphenamine Treatment of Fetid Process in Lung. Castex et al.—p. 131.
Irregular Distention of Gravid Uterus. L. Demelin.—p. 135.
Conservation of Fish by Cold. A. Loir and Legangneux.—p. 139.

Treatment of Fetid Respiratory Process.—Castex, Heidenreich and Repetto report a case of fetid expectoration in a man, aged 45. The clinical and roentgen ray examination indicated a cavity from gangrene of the lung, and bronchiectasis. Numerous bacilli were found in the sputum, but no tubercle bacilli. Under intravenous injections of neo-arsphenamine plus balsams, given by the subcutaneous and oral routes, the patient improved but the insupportable fetid odor accompanying the coughing spasms persisted. Then neo-arsphenamine was given by intercricothyroid injection (from 0.3 to 0.9 Gm.) in an aqueous solution; sometimes with glycerin added. This followed anesthesia of the trachea with a procain solution. The injection induced violent coughing and profuse discharge of sputum, for two hours. The fetid odor disappeared completely the next day, and no Vincent bacilli were found in the sputum five days later. The tenth day the fetid odor reappeared; then the injections were repeated, and the dose gradually increased to 0.9 Gm. A total of five injections was given at eight, ten, twelve and fifteen day intervals. The injections were borne relatively well, and the tendency to bronchorrhea was arrested by injection of morphine.

95: 143-174 (Feb. 16) 1926

The Mixed Flora of Bronchial Spirochetosis. H. Vincent.—p. 143.
*Endobronchial Inoculation of Tuberculosis. G. Petit et al.—p. 160.
*The Filtrable Tubercle Bacillus. F. Arloing and A. Dufourt.—p. 163.
The Cancerization Process. J. P. Bounhiol.—p. 168.
Acute Hemorrhagic Form of Syphilitic Iritis. E. Valude.—p. 173.

Endobronchial Inoculations and Experimental Tuberculosis.—Petit, Panisset and Kfoury induced tuberculosis exclusively of the lung in dogs and horses by inoculating the bronchi directly with the bacilli cultures or sputum from tuberculous patients. The inoculating material was introduced with a fine catheter through an opening in the trachea. The cheesy degeneration and cavity of the lung were absolutely identical with those in human tuberculosis.

The Filtrable Tubercle Bacillus and Its Passage Through the Placenta.—Arloing and Dufourt inoculated guinea-pigs with filtrates of different products from tuberculous children. The results were positive in most of the animals, thus testifying to the frequency of the filtrable tuberculous virus in children and infants. In fourteen of the sixteen positive cases there was no inoculation chancre or lesions of the glands. The animals died from progressing cachexia. Necropsy did not show cheesy degeneration, nor even tubercles but numerous acid-resisting bacilli were present in the lymph nodes. The lesions characteristic of human tuberculosis were manifest only in two instances. Gravid guinea-pigs were inoculated with the same filtrates; abundant acid-resisting bacilli were found in the lumbar gland of one fetus entering the last third of intra-uterine life. This is the first instance, they say, of transplacental transmission of the invisible tuberculosis virus of human origin. Research conducted within the last few months on dead infants or fetuses of mothers with pulmonary tuberculosis has given constantly negative results. The filtrable tubercle virus was not found in the blood from the umbilical cord, nor in the placenta.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 203-242 (Feb. 12) 1926

*Familial Neurosyphilis. G. Guillain et al.—p. 203.
*Enterococcus Pleuroperitonitis with Cirrhosis. Dumitresco-Mante and R. Olinesco.—p. 214.
*Lipiodol in Roentgenography of the Pericardium. M. R. Castex et al.—p. 217.
*Lipiodol in Diagnosis of Subphrenic Cyst. M. R. Castex et al.—p. 222.
Experimental Research on the Meltzer-Lyon Test. R. Feissly.—p. 227.
*Hemogenia with Fatal Menorrhagia. L. Payan.—p. 233.
Epidemic of Special Type of Epidemic Encephalitis. Veillet.—p. 239.

Familial Neurosyphilis.—In Guillain, Périsson and Thévenard's case the father and mother had tabes, and their son, aged 4, presented bilateral Argyll Robertson pupil and a positive Wassermann test. They know of three similar cases; namely, Apert, Lévy-Fraenkel and Ménard's case of tabes in a girl, aged 15, whose mother also had tabes, and the father had died from general paresis. He had acquired syphilis after the birth of the child and had infected the wife, and the daughter at the age of 3. Baudouin and Lévy-Valensi reported a case in 1910 of general paresis in a youth whose father and mother had died from the same disease. In Grossmann's case (1917), the father and mother presented the Argyll Robertson pupil, and they and the four children had ophthalmoplegia interna. Evidently certain syphilis viruses do not induce skin or visceral lesions, but display a special affinity for the nervous system. This cannot be ascribed merely to a special soil or casual coincidence.

Enterococcus Pleuroperitonitis Complicating Cirrhosis of the Liver.—Dumitresco-Mante and Olinesco were treating a man with cirrhosis and ascites, and signs of chronic alcoholism, when he developed symptoms of infectious pleuroperitonitis. Examination of the effusion revealed the presence of the enterococcus. Since the blood cultures were negative, it is assumed that the coccus had invaded the organism by the intestinal route. It passed thence into the peritoneum, directly or through the biliary tract, thus causing secondary infection of the peritoneum and pleura.

Iodized Oil in Roentgenography of the Pericardium.—Castex, Carelli and Gonzalez had under observation a case of tuberculous pericarditis with hemorrhagic effusion in a young man. Roentgenograms taken after release of 300 cc. of fluid and insufflation of 100 cc. of air revealed considerable thickening of the parietal pericardium, and that the shape of the cardiohepatic angle was an acute angle. A light area between the right edge of the heart and the pericardium suggested the presence of adhesions. After injection into the pericardium of 20 cc. of lipiodol following withdrawal of 100 cc. of the pericardial effusion, it became evident that the acute outline of the cardiohepatic angle was due to the extremely thickened parietal layer of the pericardium, and that there were no adhesions. Repeated lipiodol injections, at from five to fifteen days intervals, did not seem to influence the affection which ran the usual course. The absorption of the iodized oil in the pericardial cavity was very slow, as it was recovered on puncture twenty days later.

Iodized Oil in Diagnosis of Subphrenic Cysts.—Castex, Romano and Gonzalez injected lipiodol in a case of a suppurated hydatid and gas cyst, on the upper surface of the liver. Roentgenograms taken in different positions showed distinctly the contour of the cyst and its connections with the abdominal walls. The injections were also of great help in roentgenographic diagnosis of a suppurating pneumoperitonitis. The injections were always well tolerated.

Case of Hemogenia with Fatal Menorrhagia.—Frequent epistaxis and purpura before and after puberty became associated at the age of 15 with menorrhagia, prolonged for ten days every month. At 17 the patient presented a hemorrhagic effusion in the abdominal cavity, apparently of ovarian origin. Two grave menorrhagias, at a six weeks' interval, occurred at 18, causing death from anemia. The clinical features, the nonretractility of the blood clots, and the decreased number of platelets suggested the diagnosis of hemogenia. The bleeding time was not markedly changed. Payan thinks that diabetes in the father may have been responsible for the congenital debility of the liver and the disturbances of blood functioning in the daughter. There were also symptoms suggesting excessive ovarian and thyroid functioning. Extracts of different organs did not exert any action. Blood transfusions also failed to arrest the hemorrhagic tendency.

Comptes Rendus de la Société de Biologie, Paris

94: 1-96 (Jan. 15) 1926. Partial Index

*Restoration of Sight in Engrafted Eye. R. Matthey.—p. 4.
*Sensitization by the Skin. M. Golovanoff.—p. 6.
*Bile in Colon Bacillus Infection. M. Golovanoff.—p. 6.
*The Filtrable Tubercle Bacillus. T. Veber.—p. 8.
*Respiratory Ventilation in Children. Billard and Gourdon.—p. 12.
*Blood Groups and Interagglutination. N. du Bouchet.—p. 16.
*Arthus' Phenomenon from Diphtheria Anatoxin. Tzanck et al.—p. 17.
*Reticulo-Endothelial Cells and Anaphylaxis. T. V. Simitch.—p. 23.
Changes of Suprarenals in Typhoid. S. Abramov and Lebel.—p. 25.
The Erythrocytes in Tetany and Rickets. S. Van Creveld.—p. 37.
Action of Sulphur on the Heart. J. Cluzet et al.—p. 51.
Action of Hyoscine in Parkinsonian Conditions. Froment et al.—p. 57.
Real and Apparent Pulmonary Ventilation. Mathieu et al.—p. 77.

Recuperation of Sight in Implanted Eye of Triton.—Matthey's experiments were made on eighty-six tritons by Koppanyi's technic. He removed an eyeball in one of these lizard-like amphibians and implanted it in another. The aspect of the implanted eye was absolutely normal in ten months in four instances. Then he repeated the procedure with the second eye. One triton died after the second operation; in three the sight was apparently recovered in both eyes. The recovery of vision was manifested in tests with a blind triton for the control. No changes were noted in the optic nerve.

Sensitization from Skin Dressings.—Golovanoff applied dressings with horse serum or white of egg to the eroded skin of guinea-pigs, and left them for twenty-four hours. Fourteen days later the animals were given an intravenous test injection. This was followed by a specific anaphylactic shock. Sensitization can thus be induced by a superficial dressing as well as by the subcutaneous route.

Rôle of Bile in Colon Bacillus Infection.—Rabbits were given bile by the mouth, and then inoculated intravenously with a nonlethal dose of cultures of colon bacilli. While the control animals bore the injection without harm, all those sensitized with bile died in one or two days. Golovanoff emphasizes that it may be possible to vaccinate the intestinal wall against colon bacilli by ingestion of colon bacillus cultures.

Filtrable Tubercle Bacilli in Fluid of Artificial Pneumothorax.—Veber's observation confirmed that common tubercle bacilli may disappear from the effusion with an artificial pneumothorax, after a few months. The same effusion, after filtering, induced tuberculous lesions of glands in guinea-pigs, without the presence of a primary inoculation lesion. Evidently the fluid contained invisible, filtrable forms of tubercle bacilli.

Pulmonary Ventilation in School Children.—Billard and Gourdon's investigation of 150 school children disclosed a close relation between the vital capacity and the size of the chest. Consequently the vital capacity may be estimated if the size of the chest is known. They found the respiratory capacity of a child equal to one fifth of the size of the thorax; while it is equal to one third at the age of 20, and to one sixth and still less in advanced age; one thirtieth in those with emphysema.

Identity of Blood Groups and Interagglutination.—Du Bouchet reports two cases in which the maternal blood and that of the new-born belonged to the same group. While the infant's serum did not agglutinate the erythrocytes of the mother, there was pronounced agglutination of the infant's erythrocytes by the maternal blood serum. This agglutination disappeared in one instance by the eleventh day. Agglutination tests should be applied to the maternal blood, if it is used for transfusions in infants soon after birth.

Arthus' Phenomenon After Injection of Diphtheria Anatoxin.—Tzanck and his co-workers describe a case in which diphtheria anatoxin was used as a prophylactic measure in the father, mother and two children. All were injected with 0.5 cc. of anatoxin, taken from one ampule. The injection was followed, the next day, by an intense local and general reaction in the mother alone. The general phenomena persisted for five days, the local over five weeks. The local reaction resembled Arthus' phenomenon; but without suppuration or necrosis. The patient never had had diphtheria, and never had been injected with diphtheria antitoxin or any antiserum. There was no history of urticaria, asthma or other colloidoclastic manifestation. Intracardiac injections of 1 cc. of the patient's serum or of diphtheria anatoxin did not induce any reaction in guinea-pigs. Injection of 0.5 cc. of the woman's blood serum and 0.5 cc. of anatoxin induced phenomena of passive anaphylaxis in the animals. No anaphylaxis occurred with similar injections of serum from the father.

The Reticulo-Endothelial System and Anaphylaxis.—The functioning of the reticulo-endothelial cell system was experimentally blocked in guinea-pigs with injections of iron oxide, india ink or splenectomy. Beef serum was injected the next day and again the twentieth day. All died from anaphylaxis, the same as the control animals. Simitch concludes that the reticulo-endothelial tissue does not seem to take part in anaphylactic shock.

Presse Médicale, Paris

34: 193-208 (Feb. 13) 1926

Intravenous Chemotherapy of Gonorrhea. Jausion and Vaucel.—p. 193.
Insulin in Treatment of Nondiabetic Malnutrition. R. Feissly.—p. 196.
Anastomosis at Lowest Point in Gastro-Enterostomy. G. Audain.—p. 199.

34: 241-256 (Feb. 24) 1926

*Vaccination Against Tuberculosis. A. Calmette et al.—p. 241.
*Bone Surgery. R. Leriche and A. Policard.—p. 242.
*Peptone Shock and Vegetative Tonus. Garrelon and Santenoise.—p. 243.
The Fight Against Tuberculosis in Denmark and Its Results. Poix.—p. 251.

Vaccination of the New-Born Against Tuberculosis.—This report brings down to date the experiences of which a summary was given in these columns, March 6, 1926, p. 724.

New Horizon for Bone Surgery.—Leriche and Policard remark that as it seems to be definitely established now that mechanical conditions play an important part in shaping the growing bone, it seems theoretically possible to influence the healing and reconstruction of bone tissue after operations, modeling it, as it were. Their research has demonstrated that bone repair requires an optimal circulation; too much is as injurious in one way as too little in another, especially in the formation of the callus and healing of implants. They have noted that periarterial sympathectomy seemed to restore the normal balance in the circulation of the bone and surrounding tissue, accelerating ossification.

Protein Shock and the Vegetative Tonus.—Garrelon and Santenoise injected dogs and rabbits intravenously with peptone, under anesthesia. The drop of the arterial pressure was the criterion for the shock, while the oculocardiac reflex indicated the parasympathetic tonus. In animals with a normal oculocardiac reflex, the injection was followed by a gradual and moderate decline of the arterial pressure (by 2 or 3 cm.). The decrease of the pressure was prompt and considerable in dogs with pronounced vagotonia. In dogs

with hypovagotonia, the fall of the arterial pressure was slight and briefly transient. Stimulation of the vagus by simultaneous injections of pilocarpine and peptone induced a violent shock. The shock was intense, sometimes even fatal, after combined injection of eserin and peptone. The same was observed with insulin, freed from albumin. On the contrary the shock was nil or very mild in animals treated previously with atropine. Research was also made on the influence of shock on the vegetative tonus. It appeared that injections of peptone induce an immediate rise of the tonus, succeeded soon by hypovagotonia, and then again vagotonia. The first injection of peptone may not induce shock in cases with hypovagotonia; but by its inversion of the vegetative tonus the second injection brings the shock. Clinical results were identical with the experimental. The by-effects of injections of pneumococcus or streptococcus antiserum were predominant in mental patients with exaggerated vagal tonus as, for instance, maniacs or epileptics. The injections were well tolerated in patients with low tonus, as in dementia praecox. The data presented all testify to the close connection between the parasympathetic tonus and the susceptibility to shock.

34: 257-272 (Feb. 27) 1926

Results of Gastrectomy for Cancer. H. Hartmann.—p. 257.
*Adams-Stokes Syndrome. E. Géraudel and R. Giroux.—p. 258.
Broadcasting Auscultation Findings. R. Lutembacher.—p. 261.

Pathogenesis of Adams-Stokes Syndrome.—A somewhat similar article was summarized in THE JOURNAL, Feb. 20, 1926, p. 585.

Schweizerische medizinische Wochenschrift, Basel

56: 145-168 (Feb. 20) 1926

*Microscopy of the Sputum. E. Liebmann.—p. 145.
Blood After Radon Treatment of Cancer. A. Kotzareff.—p. 151.
Present Status of Vitamins. E. Fenner-Rhode.—p. 158.

Microscopy of the Sputum.—Liebmann regards microscopic examination of the sputum as a much neglected field. He prefers fixation of moist smears with methyl alcohol, and stains with a mixture of 15 parts of 1 per cent solution of thionin in methyl alcohol and 1 part of a similar solution of magdala red. An equal amount of water is added and the stain is left in contact with the smear for half an hour. The neutrophil and eosinophil polymorphonuclears show frequently a confluence of the nuclear segments, especially after addition of water, thus simulating myelocytes. A prevalence of eosinophils is known in asthma. It announces the favorable crisis in pneumonia, but has no prognostic significance in tuberculosis. The cells usually considered as alveolar epithelial cells are probably macrophages. They are normal constituents of the sputum, and are present also in the nose. The thick structure of their nucleus and the presence of nucleoli differentiate them from the monocytoid cells which appear only with affections of the alveoli, especially bronchopneumonia and pneumonia. They are evenly distributed over the field in these diseases. In pulmonary tuberculosis they occur in small heaps of four or ten or more elements. Cells with fatty granules are not a sign of tumor.

Clinica Medica Italiana, Milan

56: 291-384, 1925

Sydenham's Laudanum Should be Discarded. D. Lay.—p. 291.
*Changes in Alkaloids on Standing. E. Mura and E. Petiti.p. 298.
Desquamating Eruption from Arsphenamine. G. Cesana.—p. 305.
Catalytic Action of Antirabies Virus on Pancreatic Amylolysis. D. Larini.—p. 316.
Malta Fever Complicated with Tuberculosis. B. Maggesi.—p. 326.
*Leukopedesis Into the Stomach in Various Morbid Conditions. G. Mauro.—p. 339.
*Blood Pressure in Lead Poisoning. G. Invernizzi.—p. 347.
Latent Inflammation of Fissures of Lungs. C. Cantieri.—p. 378.

Changes in Alkaloids on Standing.—Mura and Petiti relate that of all the aqueous solutions of various alkaloids tested, quinine was the only one that seemed to be unmodified by the end of six months, responding the same as before to both chemical and biologic tests.

Leukopedesis into the Stomach in Various Morbid Conditions.—Mauro recalls that M. Ascoli and Moreschi called attention in 1901 to a proteolytic ferment in the leukocytes, but it is only recently that Loeper and Marchal have emphasized the importance of this as an element in gastric digestion. The leukocytes swarm into the stomach during digestion, and this endogastric leukopedesis is promoted by certain foods, and is inhibited by excessive acidity or gastritis, and certain other diseases. Mauro urges study of the import of these fluctuations for diagnosis and prognosis.

The Blood Pressure in Lead Poisoning.—Invernizzi has been investigating conditions as to the blood pressure in 369 cases of lead poisoning from 1910 to 1923. In acute lead poisoning and in acute exacerbations of chronic plumbism, the blood pressure is very high, but the sudden drop as other symptoms subside confirms the assumption of angiospasm as responsible for it. In other chronic forms of lead poisoning, the pressure is low, as lead depresses the heart action. After it has entailed arteriosclerosis, the systolic pressure is high, but the diastolic is low. This is explained by a reflex action from the influence of the lead on the splanchnic nerves and kidneys.

Pediatria, Naples

34: 169-224 (Feb. 15) 1926

Diagnosis of Scarlet Fever. L. Sabatini.—p. 169.
Chloroma. I. Nasso.—p. 180.
*The Kidneys in Tuberculous Children. L. Bonacorsi.—p. 187.
Infants' Vomiting. C. Gallo.—p. 197.

The Kidneys in Tuberculous Children.—Bonacorsi points to the frequency of toxic changes in the kidneys in tuberculous children. She found them in 6 per cent of the 300 children examined.

Policlinico, Rome

33: 221-254 (Feb. 15) 1926

Juvenile Progressive Paresis. P. Fornara.—p. 221.
*Febrile Tertiary Syphilis. A. Bacheca.—p. 226.
*Hyperpyrexia from Syphilitic Meningitis. G. Monateri.—p. 229.
The Gaté-Papacostas Test. G. Milani.—p. 232.
Wounds from Asses' Bites. D. Santorsola.—p. 234.
Periodic Medical Examination. A. Filippini.—p. 234.

33: 65-128 (Feb. 1) 1926. Medical Section

Spinal Cysticercus. P. Verga and A. Dazzi.—p. 65.
Gonorrhea in Little Girls. F. Ronchese.—p. 110.
Prevention and Treatment of Cancer. R. Marchesini.—p. 120.

Febrile Tertiary Syphilis.—Bacheca treated a young woman with fever, a chlorotic blood picture, and a tumor in the epigastrium. She recovered after antisyphilitic treatment. He quotes Boerhave's motto: *In dubiis suspice luem!* This applies especially to fever of doubtful origin.

Hyperpyrexia from Syphilitic Meningitis.—The extremely high temperature (42.4 C.) in Monateri's patient was probably due to syphilitic meningitis.

Riforma Medica, Naples

42: 145-168 (Feb. 15) 1926

*Glycemia and Diathermy of the Thyroid. M. Massa.—p. 145.
Suprahyoid Ranula. U. Beggiato.—p. 147.
Treatment of Cancer. N. Mori.—p. 151.
Amebic Cystitis. G. Fiorito.—p. 163.

Glycemia and Diathermy of the Thyroid.—Massa found constantly an increase in blood sugar in rabbits and man after diathermy of the thyroid region. The same procedure in exophthalmic goiter caused sometimes hyperglycemia, sometimes hypoglycemia—probably due to different (sympathicotonic and vagotonic) types of the disease.

Semana Médica, Buenos Aires

2: 1517-1584 (Dec. 17) 1925

Intravenous Treatment of Acute Rheumatism. L. Ymaz.—p. 1517.
Case of Sclerodermia with Sclerosis of the Fingers. J. L. Celasco. p. 1522.
*Autohemotherapy in Treatment of Asthma. C. G. Carranza and J. Orgaz.—p. 1527.
Autoplastic Reconstruction of Eyelid. A. D'Alessandro.—p. 1531.
Ideals of Welfare Work for Young Children. E. Foster.—p. 1534.
The Practice of Artificial Pneumothorax. A. Viton.—p. 1537. C'tn.
The Rôle of Silica in Growth of Plants. A. L. Herrera.—p. 1579.

Autohemotherapy in Asthma.—Carranza and Orgaz drew the patient's blood and reinjected 4 or 5 cc. subcutaneously in the arm or leg, gradually increasing to 8 or 10 cc. This attenuated or arrested the attack of asthma. The procedure is a kind of desensitization, and hence is applicable only to the anaphylaxis type of asthma. No effect was apparent in

three of their thirteen cases; the failures were probably due to the secondary nature of the asthma. All the others were much improved or have been cured to date. From four to ten weekly injections were given; the ages ranged from 16 to 51.

Archiv für klinische Chirurgie, Berlin

139: 1-244 (Feb. 2) 1926

*Experimental Bronchial Asthma. W. Braeucker.—p. 1.
*Bacteriology of the Stomach. L. Bitter and W. Löhr.—p. 64.
Snapping Shoulder. Guleke.—p. 106.
*Roentgen Treatment of Tuberculosis. Siedamgrotzky.—p. 114.
*Anatomy of the Common Bile Duct. F. Fuchs.—p. 124.
*Viability of Transfused Erythrocytes. H. Wildegans.—p. 135.
Destruction of Lexer's Bolt. Fu-Yin Pan.—p. 191.
Benign Papillomas of the Stomach. F. Schulze.—p. 198.
Perforation of Gastric Ulcer. J. Vigyázó.—p. 204.
Nasopharyngeal Fibroma. Breitländer.—p. 211.
*Nerves of Arteries. L. Hirsch.—p. 225.
*Artificial Chyluria. C. Lagemann.—p. 240.
Melanoma of the Intestine. E. Peritz.—p. 242.

Experimental Bronchial Asthma.—Braeucker made a morphologic and experimental study of the nerves of the lungs in dogs. The pneumogastric contains not only vasoconstrictor but also vasodilator fibers. There is besides this in dogs a spinal bronchomotor innervation running over the vagosympathetic (not over the cardiac nerves). The pulmonary plexus consists of as many sympathetic fibers as of pneumogastric fibers. Only the fibers of the posterior bronchial branches transmit motor impulses to the finest bronchioli.

Bacteriology of the Stomach.—Bitter and Löhr investigated the germs in the stomach and duodenum in various diseases, especially with ulcer of the stomach and duodenum and carcinoma of the stomach. With normal acid secretion, they found the usual harmless gram-positive microbes in the stomach and duodenum. With lowered acidity, the colon flora ascends more and more proximad, and it invades the stomach in achylia.

Roentgen-Ray Treatment of Tuberculosis.—Siedamgrotzky concludes from 730 cases of surgical tuberculosis treated with the roentgen rays that it is best suitable for tuberculous lymphomas, spina ventosa and fistulas. The results in tuberculosis of large joints were not encouraging.

Anatomy of Common Bile Duct.—Fuchs shows that there is danger of injury of the pancreas as soon as a transduodenal choledochotomy is made farther than through the muscular layer. It is possible, although difficult, to reach the common bile duct back of the duodenum. He concludes that the standard procedure at Hochenegg's clinic is rational: The manipulations in the juxtaduodenal part of the bile duct are made either from a supraduodenal opening, or the last part of the duct is avoided by supraduodenal choledochoduodenoanastomosis.

Viability of Transfused Erythrocytes.—Wildegans concludes that the transfused erythrocytes live for several weeks. It is possible to check up microscopically for two weeks on erythrocytes transfused from a polycythemia patient to an anemic subject. The iso-agglutination tests did not yield dependable results in identification of the transfused cells.

Nerves of Arteries.—Hirsch concludes that there is no histologic basis for explanation of the results of so-called periarterial sympathectomy.

Artificial Chyluria.—The chyluria in Lagemann's case (a police officer) was probably due to introduction of milk into the bladder by the subject.

Deutsches Archiv für klinische Medizin, Leipzig

150: 251-314 (Feb.) 1926

*Central Stimulants of Metabolism. R. Schoen and N. Kaubisch.—p. 251.
*Aplastic Anemia. G. Denecke.—p. 266.
*Benzine Poisoning. N. Schustrow and E. Salistowskaja.—p. 271.
*Habituation to Benzine. Idem.—p. 277.
*Internal Treatment of Peptic Ulcer. U. Steinberg.—p. 285.
*Spasms and Pains in Gastric Ulcer. R. Cobet and K. Gutzeit.—p. 295.
*Hydrochloric Acid in Pernicious Anemia. G. Taubmann.—p. 309.

Central Stimulants of Metabolism.—Schoen and Kaubisch report experiments on healthy persons. They found an increase of the basal metabolic rate amounting to from 15 to 20 per cent after injections of caffeine and of compounds of the camphor group. The increase was still stronger after lobelin. The respiratory quotient increased after lobelin and strychnine.

Aplastic Anemia.—Denecke's patient developed grave anemia of the aplastic type with microcytes and megalocytes, but without increased bilirubin in the serum. The spleen and lymph nodes became enlarged. The histologic findings were those of lymphatic pseudoleukemia.

Benzine Poisoning.—Schustrow and Salistowskaja made experiments on inhalation of petroleum ether by rabbits or guinea-pigs. They found emaciation, aplastic hemolytic anemia, increased fragility of red cells and a leukopenia affecting all the white cells. They explain the poisoning by the action of the substance on the lipoids. The serum in the poisoned animals contained less cholesterol than in the controls. They believe that with inhalation, more erythrocytes are affected than with internal administration.

Habituation to Benzine.—Schustrow and Salistowskaja studied the increasing resistance to poisoning with petroleum ether. The time of appearance of convulsions and of restitution furnished the basis for comparison. The animals in the first week had convulsions within thirteen to fifteen minutes after the beginning of the inhalation, and required fifteen minutes for recovery. At the end of the second week, they were able to stand three or four times more of the benzine. The convulsions began in seventy to ninety minutes and the animals recuperated in one or two minutes. After an injection of 0.1-0.2 Gm. of lecithin in olive oil these animals became immediately as susceptible as unaccustomed animals. They conclude that the resistance is due simply to the loss of fat in the poisoned animals and consequently a diminished absorption by the blood. The administration of fat seems to be contraindicated during chronic exposure to benzine, but would seem advantageous in treatment. They mention Nick's patient who recovered after intravenous injection of 5 cc. of a 10 per cent lecithin emulsion in spite of poisoning with 88 Gm. of benzene.

Internal Treatment of Peptic Ulcer.—Steinberg reports fine results of treatment of ulcers of the stomach and duodenum with silver nitrate. He administers three or four times daily 1 tablespoonful of a solution of 0.25 up to 0.4 Gm. of silver nitrate in 120 cc. of water before meals.

Spasms and Pains in Gastric Ulcer.—Cobet and Gutzeit failed in their attempts to cause pains in gastric ulcer patients by chemical (acid) or electrical stimuli. They conclude that hyperacidity alone cannot account for the pains and spasms in such patients.

Hydrochloric Acid in Pernicious Anemia.—Taubmann reports a case with almost every symptom of pernicious anemia, but with free hydrochloric acid in the stomach. In spite of this, the duodenum contains colon bacilli.

Deutsche medizinische Wochenschrift, Berlin

52: 267-306 (Feb. 12) 1926

*Laryngeal Diphtheria. J. v. Bókay.—p. 267.
*Bilirubin and Gastric Secretion. W. Arnoldi and Schechter.—p. 270.
*Combination of Insulin and Dextrose. K. Grunenberg.—p. 271.
*Bronchopneumonia in Infants. R. Hamburger.—p. 274.
Sthenic Diabetic Coma. I. St. Lorant.—p. 275. C'cn.
*Monocytic Angina. S. Kwasniewski and N. Henning.—p. 277.
*Metabolism of Erythrocytes in Anemia. G. Denecke.—p. 280.
Fractures of the Elbow. M. Borchardt.—p. 280.
Treatment of Fistulas. R. Mühsam.—p. 281.
Fat Embolism. F. Landois.—p. 283.
Leg Ulcer. K. Specht.—p. 285.
Brain Tumor and Accident. R. Sonntag.—p. 288.
Chemotherapy. R. Schnitzer.—p. 289. C'cn.
The Prussian Tuberculosis Law. P. Konitzer.—p. 291.
Dentists and Technicians. Dieck.—p. 293.

Laryngeal Diphtheria.—Bókay intubates even in infants, but controls them daily to detect injury from pressure. He had a mortality of 49 per cent among 102 children under the age of 2 treated by tracheotomy when the intubation had failed.

Serum Bilirubin in Secretory Disturbances of the Stomach.—Arnoldi and Schechter estimated the blood bilirubin content with Meulengracht's nonspecific method. It was near the lower limits of normal in hyperacidacity and near the upper limits in subacity and achylia. They believe that this is due

to increased liver function with rapid transformation of indirect bilirubin into the direct form (van den Bergh) in hyperacidity, and lowered liver function in achylia.

Combination of Insulin and Dextrose.—Grunenberg had excellent results in diseases of the pancreas and liver (including jaundice), with daily injection of 10 units of insulin followed by 40 Gm. of dextrose (in injection, by the mouth, or by enema).

Bronchopneumonia in Infants.—Hamburger prefers the carrying around of children to their complete rest in bed. Cold air and sedatives as well as arteriotomy improve the prognosis in infants and small children.

Monocytic Angina.—Kwasniewski and Henning report eight cases of monocytic angina. The generalized affection of the lymphatic apparatus may occur without the tonsillitis, which suggests a common origin for both.

Metabolism of Erythrocytes in Anemia.—Denecke found an increase in acidity of the anemic blood in standing. He believes that it is not due to glycolysis, although the latter may take place. He thinks that it is connected with the production of carbon dioxide and diffusion of the chlorine ions into the erythrocytes.

Klinische Wochenschrift, Berlin

5: 249-296 (Feb. 12) 1926

The Vagus Heart. W. Frey.—p. 249.
*Blood Cholesterol and the Liver. Thannhauser and Schaber.—p. 252.
*Carbohydrates Plus Insulin in Coma. E. Bucka.—p. 254.
*Oxaluria. F. Piccininni and E. Lombardi.—p. 260.
*Hemoglobinuria in Arsphenamine-Bismuth Treatment. F. Munter and H. Steinitz.—p. 263.
*Serology of Syphilis. A. Klopstock and A. Hilpert.—p. 265.
Homoioplastic Ovarian Graft. P. Sippel.—p. 269.
Roentgen Teleangiectasia. M. Jessner.—p. 270.
The "Eidetic Faculty in the Young." Leven.—p. 271.
"Modified Abderhalden Test." Lüttge and v. Mertz.—p. 271.
Reply. E. Herzfeld et al.—p. 272.
Spontaneous Encephalitis in Animals. F. H. Lewy et al.—p. 272.
Time Reenforcing the Action of Drugs. T. Gordonoff.—p. 273.
Spontaneous Pneumothorax. H. Dorendorf.—p. 274. C'cn.
Static Innervation. E. A. Spiegel.—p. 277.
Puncture and Transfusion Apparatus. E. Marr.—p. 294.

Blood Cholesterol and the Liver.—Thannhauser and Schaber observed a lowered cholesterol-ester: cholesterol ratio in the blood and serum from patients with parenchymatous disturbances of the liver. They believe that it is due to an injury of the liver ferment which normally splits the cholesterol esters (only free cholesterol is excreted by the bile). Similar observations, with a different explanation, had been made by Bürger before.

Carbohydrates Plus Insulin in Coma.—Bucka concludes that in cases of deep coma, insulin alone is indicated. This applies also to beginning coma being treated at a clinic with facilities for continuous control of the blood sugar. In the precoma stage, the dosage of insulin is difficult, and she recommends addition of sugar.

Oxaluria.—Piccininni and Lombardi confirm Sandro's observation on a colon bacillus strain which occurs in the feces of subjects with oxaluria, and produces in the first passage (and especially in symbiosis with *Bacillus subtilis*) oxalic acid. It caused oxaluria in healthy subjects when administered in capsules.

Hemoglobinuria in Arsphenamine-Bismuth Treatment.—Munter and Steinitz observed hemoglobinuria and later nephritis in a young syphilitic man treated with neo-arsphenamine and bismuth. General muscular spasms, resembling those of the Haff disease, were present. The patient died from uremia. The blood pressure remained only at the upper limits of the normal range.

Serology of Syphilis.—Klopstock and Hilpert demonstrate that the coincidence of positive results with several methods is much greater in subjects with a history of syphilis than in others.

Medizinische Klinik, Berlin

22: 239-278 (Feb. 12) 1926

Dyspnea. Goldscheider et al.—p. 239. C'td.
Roentgen Diagnosis of the Epigastrium. K. Gutzeit.—p. 242.
Psychopathic Children. Mönkemöller.—p. 244. C'cn.
Insulin Treatment of Exophthalmic Goiter. O. Klein.—p. 248.
Brain Injury by Lightning. G. Herrmann.—p. 248.
Explosion from High Frequency Current. S. Jellinek.—p. 249.
*Gonorrhea in Men. L. Balog.—p. 250.
Syphilis of the Stomach. B. Cohn.—p. 253.
Intravenous Infusion by the Practitioner. H. Kritzler.—p. 256.
*Pancreas Function Test. C. Papp.—p. 257.
Economy and Retiring Fund. E. Stier.—p. 259.
Cancer and Its Treatment. O. Strauss.—p. 263. C'td.
Syphilis. F. Pinkus.—p. 266.

Gonorrhea in Men.—Balog pleads for better knowledge of Picker's research. The latter considers gonorrhea as a general disease affecting in men chiefly the glands of the urogenital tract (Littré's, seminal vesicles, prostate). His treatment consists in lavage and bimanual expression of the contents of the prostate and the seminal vesicles, the patient in the erect position and with his bladder filled.

Pancreas Function Test.—Papp publishes the details of Carpi's method of estimation of the trypsin content of the duodenal fluid or the feces. Gelatin is the medium used, and sodium fluoride serves to inhibit growth of germs. Blood inhibits the action of trypsin, pus stimulates it.

Monatsschrift für Geb. und Gynäkologie, Berlin

72: 129-258 (Feb.) 1926

*Deflexion Presentations. H. Kamniker.—p. 129.
Adnexitis and Appendicitis. G. H. Schneider.—p. 142.
Manual Removal of the Placenta. H. Montag.—p. 150.
Cleidocranial Dysostosis. W. Nettesheim.—p. 159.
*Ectopic Pregnancy. L. Zeitlin.—p. 168.
Bardenheuer's Incision. E. Martin.—p. 183.
*Resuscitation of the New-Born. S. von Wachenfeldt.—p. 185.
Phocomelia. C. Doerffer.—p. 195.
*Vaginal Bacteria and the Puerperium. H. von Broich.—p. 199.
*The Menstrual Poison Question. G. Schubert and O. Steuding.—p. 201.
Injuries of Sex Organs. W. Raaflaub.—p. 206.
Pyelitis. E. Puppel.—p. 224.

Deflexion Presentations.—Kamniker recommends conservative treatment in all deflexion presentations. Among 147 cases of Peham's clinic, 98 per cent of the face presentations, 51.5 per cent of the sinciput and 46 per cent of the forehead presentations were delivered without any intervention, except sometimes rupture of the bag of waters and episiotomy.

Exploratory Puncture of Rectovaginal Pouch in Ectopic Pregnancy.—Zeitlin warns against basing the diagnosis exclusively on the result of the puncture. Yet it is useful if pus or micro-organisms are discovered, since a laparotomy is dangerous in such cases. The puncture is harmless, if made in the middle line of the posterior vaginal wall and if it is not attempted in a state of severe shock.

Resuscitation of the New-Born.—Wachenfeldt had perfect results with intracardiac injection of 0.5 and 1 cc. of epinephrine (1:1,000) in two apparently stillborn children.

Vaginal Bacteria and the Puerperium.—Broich finds that the degree of bacteriological purity is in no relation to the puerperal morbidity of pluriparas. In primiparas, a low degree of bacteriologic purity usually entails a mild infection characterized by the fetid odor of the lochia.

The Menstrual Poison Question.—Schubert and Steuding repeated Schick's experiments on the alleged menstrual poison, and added certain others. They found no indications of its presence.

Monatsschrift für Kinderheilkunde, Leipzig

31: 491-586 (Feb.) 1926

*Reaction Time in Infants. A. Peiper.—p. 491.
Trypsin in Rickets. J. von Lukács.—p. 507.
Treatment of Chorea. J. Duzár.—p. 520.
Koplik's Spots. G. Petényi.—p. 533.
Insulin Treatment of Children Out-Patients. A. Heimann-Trosin and H. Hirsch-Kauffmann.—p. 536.
*Treatment of Tuberculous Meningitis. K. Klinke.—p. 539.
*Vasomotors in Measles and the Pirquet Test. I. Kollár.—p. 542.
Gland Fever. F. Mündel and J. Franz.—p. 545.
Thick Feedings in Pylorospasm. C. Stamm and O. Herz.—p. 553.

Reaction Time in Infants.—Peiper measured the time between an auditory stimulus and the motor reaction thereto in infants. It was about a quarter of a second in infants from 2 to 4 months of age. The average variation was 0.068 seconds. The reaction time of sleeping infants is longer—up to a few seconds.

Treatment of Tuberculous Meningitis.—Klinke tried Sharp's method (intraspinal insufflation of oxygen) in six children with tuberculous meningitis. All of them died.

Vasomotors in Measles and Pirquet Test.—Kollár observed a diminished skin reaction to mechanical stimuli (red dermography) in measles during the period of tuberculin anergy. She concludes that this is another indication of the significance of the vasomotors for the tuberculin skin test.

Wiener Archiv für innere Medizin, Vienna

12: 169-384 (Feb. 10) 1926

*Respiratory Metabolism. H. Pollitzer and E. Stolz.—p. 169.
Calcium in Blood and Cerebrospinal Fluid. F. Depisch.—p. 189.
*Angina Pectoris. R. Singer.—p. 193. Comment. Rothberger.—p. 209.
Arteritis and Plebitis Obliterans. S. Cserna.—p. 213.
*New Blood Constituent. A. Leimdörfer.—p. 227.
Shape of Erythrocytes. J. v. Boros.—p. 243.
*Hemolytic Jaundice. J. v. Boros.—p. 255.
*Arthritis in Psoriasis. J. Morgenstern.—p. 273.
*"Aseptic" Epidemic Meningitis. A. Wallgren.—p. 297.
Acute Leukemia. O. A. Rösler.—p. 313.
Bundle Block. D. Scherf.—p. 327.
Polymyositis. E. Schill.—p. 353.
*The Phthisic Habitus. A. V. Frisch and K. P. Eiselsberg.—p. 361.

Respiratory Metabolism.—Pollitzer and Stolz found at night a lowering of the specific dynamic action of ingested and injected proteins. They recommend therefore to administer injections of tuberculin in the evening (to avoid fever), and injections intended to provoke fever, in the morning. It is possible that work or eating at night is an overlooked pathogenic factor.

Pathogenesis of Angina Pectoris.—Singer concludes from his experiments on dogs that ischemia of the heart muscle does not cause pains. The epicardium, pericardium, aorta and coronary arteries are sensitive. Ligation of the latter hurts only if the adventitia is preserved.

New Blood Constituent.—Leimdörfer gives the details of his isolation and estimation of the compound he found in erythrocytes. It is a basic substance, giving the diazo reaction, but it is not identical with the compound responsible for the diazo reaction in the urine. Except for recent syphilis and certain cases of fever, it was most extraordinarily increased in tuberculosis.

Hemolytic Jaundice.—Boros confirms the small diameter and relatively normal volume of the erythrocytes in hemolytic jaundice. This seeming microcytosis disappears after splenectomy, although the fragility remains high. He believes that the change of shape is only a secondary symptom of regeneration, and that it occurs in anemias of other origin.

Arthritis in Psoriasis.—Morgenstern believes that psoriasis is a general affection of the body. The arthropathies which occur with it would correspond to a secondary or tertiary stage. The diagnosis is made by the parallelism between the manifestations on the skin and in the joints, and by exclusion of arthritis of other origin.

"Aseptic" Epidemic Meningitis.—Wallgren describes a sporadic form of acute meningitis. The clinical symptoms are typical; the prognosis is good; the disease lasts only a few days. The cerebrospinal fluid contains lymphocytes and is sterile.

The Phthisic Habitus.—Frisch and Eiselsberg deny any predisposing influence from "habitus phthisicus." It is rather a sequel of tuberculosis. Even here it occurs usually with the mild forms, not with the destructive "phthisis."

Wiener klinische Wochenschrift, Vienna

39: 177-204 (Feb. 11) 1926

Immunology and Epidemiology. W. Böhme.—p. 177. C'td.
*The Nose. L. Hofbauer.—p. 180.
Syphilitic Infiltration of Stomach. I. Eisenklam.—p. 182.
Spontaneous Recovery from Pancreas Necrosis. T. Moisescu.—p. 185.
*Fourth Disease. K. Hochsinger.—p. 186. C'cn.
Rustless Steel. G. Schapringer.—p. 188.
"Anesthesia in Small Children." F. Kazda.—p. 189.
*Treatment of Squint. J. Meller.—p. 190.
Treatment of Neuralgia. S. Erben.—p. 191.
Hormone Therapy in Gynecology and Obstetrics. E. Herrmann. Supplement. Pp. 1-16.

The Nose.—Hofbauer reviews the experimental evidence on the passage of air through the nose. Under normal conditions, only the upper part of the nose—not the broad base—is used for it. This is due to the fact that the nostrils are horizontal, so that the air has to ascend vertically. The absence of the external nose (war wounds) causes respiratory disturbances due to the direct impact of the current of air.

Fourth Disease.—Hochsinger is convinced that the "fourth disease" (Filatow-Dukes) exists as a clinical entity. He differentiates it from German measles by the scarlatiniform rash, and from scarlet fever especially by the absence of subsequent desquamation. He suggests the name "scarlatinella."

Treatment of Squint.—Meller emphasizes the fact that concomitant strabismus begins only intermittently at the age of 3 or 4, when the child begins fixation of small objects close to his eyes. The physician discovers it when holding a piece of paper in front of one eye and asking the child to look with the other eye at an object close to the eye. Conservative measures can succeed only if treatment starts immediately. It consists in atropinization of the eyes, and exact correction of the refraction anomaly. If the squint is of longer standing, the atropine treatment has to be kept up for a longer period. Besides this, it is necessary to train the weaker eye, to avoid amblyopia. This is accomplished with a small black disk fitting tightly to the orbit of the healthy eye. This special monocular goggles should be worn for several hours daily. As long as there is hope for success with conservative measures, surgical intervention can be only injurious. Even if the treatment fails, he advises against intervention before the twelfth to the fourteenth year. The squint may disappear spontaneously, and it is preferable to defer surgery until the child is intelligent enough to submit to local anesthesia. No dosage of the degree of intervention required is possible under general anesthesia.

Zeitschrift für Geb. und Gynäkologie, Stuttgart

89: 497-709 (Feb. 15) 1926

Cells of the Endometrium. E. Terruhn.—p. 497.
*Dyspareunia in Pregnancy. J. S. Galant.—p. 505.
Glycogen in Vaginal Epithelium. E. Schwab.—p. 510.
Quadruplets. E. Häfeli.—p. 519.
*Lutein Cells and Chorio-Epithelioma. K. Herold.—p. 561.
Blood Transfusion in Gynecology. H. Schultheiss.—p. 570.
Congenital Ichthyosis. F. Heinrichsbauer.—p. 597.
*Placenta Praevia. H. Wagner.—p. 605.
Etiology of Rupture of the Uterus. H. Kurtz.—p. 615.
Eclampsia. U. Westphal.—p. 626.
Thyroid Tissue Tumor in the Ovary. T. Manasse.—p. 638.
Abdominal Pregnancy. L. Schoenholz.—p. 652.
The Dilatation Period. B. Aschner.—p. 710.

Dyspareunia in Pregnancy.—Galant rejects dyspareunia as a cause of sterility. Contrary to this, he thinks that the frequency of dyspareunia in sterility is a sequel or a coordinated phenomenon. He found regularly a lowering of the libido during pregnancy, and its disappearance after the sixth month. This may be due chiefly to the absence of the uterine part of the orgasm, but it is also due to some extent to mental causes (anxiety not to injure the fetus).

Lutein Cells and Chorio-Epithelioma.—Herold's patient had a malignant chorio-epithelioma. It retrogressed after ovariectomy, which revealed a strong proliferation of lutein cells.

Placenta Praevia.—Wagner reviews the 172 cases of placenta praevia observed in Benckiser's clinic from 1893 to 1923 among 19,027 childbirths. The results have improved since transperitoneal cesarean section became the method of choice.

Zeitschrift für klinische Medizin, Berlin

102: 649-807 (Feb. 6) 1926

*The Hemorrhagic Diathesis. E. Leschke and E. Wittkower.—p. 649.
*Intracutaneous Injection. F. Hoff.—p. 745.
Vagotonia and Sympathicotonia. J. Gelmann.—p. 768.
Achondroplasia and Endocrines. D. M. Rossiysky.—p. 783.
Gastroscopy. W. Sternberg.—p. 796.

The Hemorrhagic Diathesis.—Leschke and Wittkower publish an extensive survey on the pathogenesis and clinical aspects of thrombopenic purpura.

Intracutaneous Injection.—Hoff finds that the explanation of leukopenia following intracutaneous injections as due to the vagotonic increase of the leukocytes in the liver, is not proven. Yet he admits the significance of the vegetative nervous system for it.

Zeitschrift für Krebsforschung, Berlin

23: 2-88 (Feb. 1) 1926

*Food and Growth of Cancer. F. Ludwig.—p. 2.
Anaphylaxis in Autohemotherapy of Cancer. Zerner.—p. 9.
*Tissue Cultures and Oxygen. A. Fischer and E. B. Andersen.—p. 12.
*Cancer Growth and the Endocrines. H. Elsner.—p. 28.
High Local Cancer Rate. Himburg.—p. 45.
Cancer Necropsy Statistics. W. Janusz.—p. 47.
Multiple Carcinomas. H. Siebke.—p. 66.
Cytolytic Action of Selenium. A. H. Roffo and L. M. Correa.—p. 82.

Food and Growth of Cancer.—Ludwig fed sixty mice with a diet free from vitamins for twelve days before and after inoculation of carcinoma. The cancer did not take in any of them. The vitamin-free food had no effect when given after the appearance of cancer. The results were similar, although not so perfect (35.7 per cent protection), in fourteen rats inoculated with a sarcoma after fifty to sixty days of a diet free from vitamins.

Tissue Cultures and Oxygen.—Fischer and Andersen found that a higher oxygen pressure killed cultures of Rous' chicken sarcoma faster than cultures of fibroblasts. With suitable doses, pure cultures of fibroblasts were obtained from cultures mixed with sarcoma. They discuss the therapeutic possibilities.

Cancer Growth and the Endocrines.—The inoculated tumors seemed to be inhibited in their growth, in Elsner's experiments, by injections of a testis extract and—to a less extent—by a pituitary extract. A pituitary extract from another manufacturer seemed to enhance the growth. He is pessimistic as to the outlook for organotherapy in cancer.

Zeitschrift für Tuberkulose, Leipzig

44: 273-352 (Feb.) 1926

*Tuberculosis in Tobacco Workers. E. von Müller and Berghaus.—p. 273.
Therapeutic Paralysis of the Diaphragm. E. Gergely.—p. 285.
*Sanocrysin in Experimental Tuberculosis. O. Bang.—p. 298.
Mixed Infection in Tuberculosis. J. Abakelia.—p. 306.
Petruschky's Sanitation Experiment. E. Effler.—p. 315.
Antiformin Enrichment Method. W. Mueller.—p. 318.
*The Mátéfy Test. H. Rosenhagen.—p. 321.
Psychotherapy in Tuberculosis. J. Kollarits.—p. 324.

Tuberculosis in Tobacco Workers.—Müller and Berghaus were delegated to study the cause of the high tuberculosis mortality in a rural district near Mannheim. It seemed at first that work in tobacco factories is to be incriminated. Yet they found that these workers are weak before they start working there, the strong ones preferring better paid occupations. The infection in the plant is certainly possible, but it seemed that infection in the home was a more important factor. The hygienic conditions in the homes of most of the patients were horrible.

Sanocrysin in Experimental Tuberculosis.—Bang tested the action of Sanocrysin in vitro and in vivo. Five bovine and three human strains of tubercle bacilli grew in a concentration of 1:5,000 Sanocrysin, although Møllgaard claims that it inhibits their growth in a concentration of 1:100,000. Møllgaard's cultures used for infection of animals were of an abnormally low virulence. When using fresh cultures or pus from spontaneous tuberculosis of cattle, Bang never obtained any curative action from Sanocrysin.

The Mátéfy Test.—Rosenhagen found that the Mátéfy test has no practical value in pulmonary tuberculosis.

Zentralblatt für Chirurgie, Leipzig

53: 385-448 (Feb. 13) 1926

Central Fibromas of the Jaws? A. Krogius.—p. 386.
Fractures of Malleoli. K. Ludloff.—p. 390.
Prosthesis of Thigh. Zur Verth.—p. 392.
Intravenous Infusion of Camphor. G. Hosemann.—p. 394.
*Fat Embolism After Bone Surgery. M. Schwamm.—p. 395.
Stenosis of Pylorus from Hydrochloric Acid. H. Oeding.—p. 397.
Drainage of Clean Wounds. S. Ligin.—p. 398.
The Surgery of the Golden Age in Spain. F. Lejeune.—p. 400.

Fat Embolism After Bone Surgery.—Schwamm explains the fat embolism after orthopedic interventions on children—as previously reported here—by pointing out that all these patients had been operated on before, and had been kept in plaster casts for a long period. He emphasizes that Lorenz' clinic tries to avoid redressment operations on such children for several months after the removal of the cast. The same applies to children after poliomyelitis, who had not been walking. The fatty degeneration of the bone marrow predisposes them to fat embolism. Dieting, light, cautious (!) massage and passive movements should always precede surgery on such children.

Zentralblatt für Gynäkologie, Leipzig

50: 385-448 (Feb. 13) 1926

Basal Metabolism in Dysmenorrhea. A. Heyn.—p. 386.
Medical Publications. M. Henkel.—p. 391.
High Forceps and Cesarean Section. A. Calmann.—p. 393.
*Rupture in Scar from Cesarean Section. P. Steinberg.—p. 396.
*Gonorrhea of Eye After Cesarean Section. H. O. Neumann.—p. 400.
Cesarean Section with Vulvar Edema. H. Gertler.—p. 403.
*Cesarean Section with Vulvar Eczema. W. Liepmann.—p. 405.
Exohysteropexis. F. J. Melhuba.—p. 406.
*Cesarean Section After Death. E. Noltmann.—p. 408.
Delivery After Death. H. Hellendall.—p. 412.
Cesarean Section in Eclampsia. S. Liebmann.—p. 414.

Rupture in Scar from Cesarean Section.—Steinberg concludes from his case that a second cesarean section should be done at the latest at the beginning of labor pains.

Gonorrhea of Eye After Cesarean Section.—Neumann delivered the infant by a cesarean section. In spite of this a gonococcal conjunctivitis developed on the second day. He attributes it to the early bursting of the bag of waters.

Cesarean Section in Eczema.—Liepmann regards eczema of the vulva, containing streptococci, as an indication for abdominal cesarean section. In his case a placenta praevia furnished an additional indication.

Cesarean Section After Death.—Noltmann made a cesarean section six minutes after death of the mother from pulmonary embolism. The child was asphyxiated, but survived. He made another cesarean section on a woman with mitral stenosis and beginning pulmonary edema, under lumbar anesthesia, and in the sitting position. The child was living and the mother improved rapidly.

Vestnik Microbiologii i Epidemiologii, Saratov

4: 3-141, 1925. Partial Index

*The Dick Test in Scarlet Fever. M. Izabolinsky and J. Lipkin.—p. 3.
Plague Bacilli Do Not Survive in the Fur of Siberian Marmots. N. Gaisky.—p. 15.
Stain for Blood and Blood Parasites. K. Plavtoff.—p. 119.

The Dick Test in Scarlet Fever.—Izabolinsky and Lipkin made their research with toxin obtained from seven strains of streptococci found in the throat of scarlet fever patients. They used also three strains from cultures of pus from postscarlatinal otitis, and a culture of streptococci from empyema. The streptococci were isolated from patients with prolonged forms of scarlet fever as well as from those with the fulminating form. Among the different species, there was also the diplococcus streptococcus, the frequent presence of which in scarlet fever was emphasized by Gabritchevsky. Certain streptococci were hemolytic; others were not. Dextrose agar and Martin's bouillon were used for the cultures; the latter were kept in the thermostat for six days and then passed through a Chamberland filter. It was established that intradermal injection of 0.1 cc. of the toxin, diluted 1:2,000, is able to induce redness and infiltration at the point of injection. Of 430 reactions only 390 could be observed within twenty-four hours. Redness started after six hours; reached the maximum after twenty-four hours, and disappeared in from thirty-six to forty-eight hours. In order to avert pseudo-reactions, a simultaneous injection was made on the other arm with this toxin heated to 95 C. for an hour. From 70 to 76.2 per cent of positive tests were noted below the age of 15; 53.1 per cent between 15 and 25, and 33.3 per cent after 25. The reaction was positive in 22.5 per cent of forty subjects with a scarlet fever history. The results were identical with the toxin heated to 55 C. for thirty minutes. It is possible that while the toxic form of scarlet fever entails immunity, there is no immunity with the localized form (predominant lesions in the nose and throat) or the exanthematous. This may possibly explain the positive Dick tests after scarlet fever.

Finska Läkaresällskapets Handlingar, Helsingfors

68: 1-86 (Jan.) 1926

*The Roentgen Findings with Duodenal Ulcer. G. Jansson.—p. 10.
*Mechanism of Invagination of the Intestine. J. Heinonen.—p. 23.
*Syphilitic Temporomaxillary Arthritis. Baltscheffsky.—p. 38.
*Production of Carbon During Fasting. E. Adlercreutz.—p. 43.
Lambliasis with Pernicious Anemia. M. Savolin.—p. 53.
Insulin Made in Finland. T. W. Tallqvist.—p. 60.

The Roentgen-Ray Findings with Duodenal Ulcer.—Jansson drew the correct diagnostic conclusions from the niche, the filling defect, the retraction or the diverticulum in 70 per cent of his twenty-six operative cases; in half of the others his presumptive diagnosis was confirmed later. In the others the ulcer was in the pylorus region. Nine roentgenograms are reproduced.

Invagination of the Intestine.—Heinonen concludes that even a minute submucous tumor may induce stenosis, with or without spasm, and the bowel below this point atrophies and stretches. The bowel above slides into this gaping segment.

Syphilitic Arthritis of the Temporomaxillary Articulation.—The man had acquired syphilis seventeen years before the pains and swelling developed in the lower jaw, in five months gradually involving the temporal region, with severe pains in cheek and temples and trismus. A complete cure of the arthritis was realized in less than three weeks under iodide and neo-arsphenamine.

The Metabolism During Fasting.—Adlercreutz confirms the remarkable drop in the total metabolism even on the first day or so of fasting. It is especially noticeable in the production of carbon.

Hospitalstidende, Copenhagen

69: 1-28 (Jan. 6) 1926

*Kidney Function Tests. E. Busch.—p. 1.

Comparison of Kidney Function Tests.—Busch gives charts from twenty-five patients who had all had acute nephritis at some time and who recently had had seven different kinds of tests applied parallel. The findings in regard to Addis' "ratio," the diuresis during the three "ratio" hours, the urea content of the blood, and phenolsulphonphthalein elimination all fluctuated parallel to each other to a certain extent, while the responses to the thiosulphate test, Strauss' water test and the uric acid in the blood were more erratic. The phenolsulphonphthalein test is not very sensitive; normal findings were obtained in over 50 per cent of the cases. The Addis ratio test is the most sensitive of all, but it takes more time than the others. The amount of water eliminated in the three "ratio" hours seems to be a more reliable index of the water eliminating power of the kidney than the Strauss diuresis test. This enhances the value of the Addis ratio test as it throws light on the capacity of the kidneys for excretion of both urea and water. It can be supplemented further by a succeeding "thirst" test and microscopic examination of the urine. We thus ascertain the maximum excreting power for urea and for water, the maximum diluting and concentrating power, and the microscopic findings in the urine after twenty-four hours of dry nourishment.

69: 49-76 (Jan. 21) 1926

*Wassermann Reaction at Childbirth. H. Boas and Gammeltoft.—p. 49.
*Idem. Idem and K. Sick.—p. 61.
*Cancer of the Uterus. T. Dalsgaard-Nielsen.—p. 64.

The Wassermann Reaction in the Retroplacental Blood.—Boas and Gammeltoft analyze the literature on this subject and relate their own experience in comparing the response to the Wassermann test in the venous and the retroplacental blood in 273 patients. The retroplacental blood gave nonspecific responses to the Wassermann test and to various precipitation tests in forty-three of their 254 cases. It is thus not dependable for serologic tests.

The Wassermann Test in Parturients.—Boas, Gammeltoft and Sick obtained a positive reaction to the Wassermann test in the blood serum in 6.7 per cent of 2,200 parturients. The test was repeated a year or two later with practically similar findings, confirming that the positive responses had not been due to the pregnancy or childbirth. The reaction is as dependable during these conditions as at other times.

Cancer of the Uterus.—Fully 12 per cent of Dalsgaard-Nielsen's seventy-three patients with inoperable cancer of the cervix were relieved by radiotherapy from all their symptoms for periods up to three and a quarter years, and 52 per cent were improved for up to two and a half years; only 37 per cent showed no benefit. He advises radiotherapy even with operable cancer of the cervix, declaring that the results are as good as after operative treatment while the mortality is less; 16 per cent of ninety-four cases in this category were free from symptoms for periods up to three and a quarter years, and 55 per cent were materially improved, for even longer than this. On the other hand, the results of operative treatment are particularly good with cancer of the body of the uterus, so that radiotherapy is not advised unless the general condition forbids operative intervention.

69: 77-96 (Jan. 28) 1926

Congenital Atresia of Biliary Passages. S. Hansen.—p. 77.
*Action of Cod Liver Oil Water. E. Rekling.—p. 91.

Cod Liver Oil-Water and Rickets.—Rekling reports that rats fed with the McCollum 3,143 ration developed rickets the same, whether or not they had been treated with Malmstrøm's cod liver oil-water. Malstrøm claims unusual efficacy for distilled water after prolonged contact with cod liver oil that had been exposed to ultraviolet rays. He assumes that the water takes up certain useful elements from the oil, but Rekling saw no evidence of rickets-preventing action by oral administration.

69: 97-120 (Feb. 4) 1926

*Chondromas in Joint Capsule. M. Fenger.—p. 97.
Extra Phalanx on Thumbs. A. Kristjansen.—p. 109.

Chondroma in the Capsule.—Fenger adds four new cases to the forty-four he has found on record in which chondromas had formed in an apparently sound knee, elbow or other joint. The development is extremely slow and benign, the growths do not encroach on the articulating surfaces and the functional disturbance is slight, as a rule. He regards the lesion as a benign tumor, of embryonal origin; there was no history of trauma in the majority of the cases. The roentgenogram shows hyaline lumps of cartilage, each with more or less of a pedicle, all on the inside of the capsule, and of various sizes. The lumps may break loose from the pedicle, and there may be thus a large number of loose bodies in the joint; 108 were removed from one elbow in one case.

Norsk Magazin for Lægevidenskaben, Oslo

87: 89-168 (Feb.) 1926

*Periarterial Sympathectomy. J. Holst.—p. 89.
*Pains in the Stomach in Children. Toverud.—p. 111.
*Treatment of Tuberculous Glands. P. Amundsen.—p. 119.
*Fungus Casts in the Urine. E. Gundersen.—p. 124.

Periarterial Sympathectomy.—Holst thinks that our knowledge of the vegetative nervous system is still so imperfect that the theories on which periarterial sympathectomy is based should be regarded with considerable reserve. In his own experience, the operation cured a case of leg ulcer, one of angiospasm and one of a neurotrophic ulcer, but in two cases of trophic ulcers complicated with arteriosclerosis, no benefit was derived.

Chronically Recurring Pain in the Stomach Region in Children.—Toverud refers to what has been called umbilical colic, chronic gastric catarrh and recurring colitis. The clinical picture suggests some general affection with the frequently recurring pains in the stomach region. He ascribes it to improper food, and lack of regular habits. The whole can be improved or cured by altering the mode of life, giving fruit in abundance, with green vegetables, sour milk and coarse, hard bread.

Roentgen-Ray Treatment of Tuberculous Glands.—Amundsen states that 81 per cent were cured of thirty-two patients with simple enlargement of the glands; 49 per cent of thirty-two with periadenitis in addition, and 77.4 per cent were cured of the fifty-three with suppuration and fistulas in the glands. The total cured thus averaged 66 per cent, and recurrence was observed in 4 per cent. All have been reexamined from two to nine years since the treatment.

Fungus Casts in Urine.—No albumin, pus or blood elements were found to explain the dysuria in the adult man, but actual casts were found which were evidently formed by a fungus of the penicillium species.